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BULLETIN OF THE

TAYLOR SOCIETY

AN INTERNATIONAL SOCIETY TO PROMOTE THE SCIENCE AND THE ART OF ADMINISTRATION AND OF MANAGEMENT

Second Section—Annual Meeting Report

ADMINISTRATION, SALES, INDUSTRIAL RELATIONS

Discussed by a Number of Authorities in These Fields

Engineering Societies Building
29 W. Thirty-Ninth St.
New York

FEBRUARY, 1931 VOL. XVI, NO. 1

Objects of the Taylor Society Incorporated

The objects of this Society are, through research, discussion, publication and other appropriate means:

1. To secure—for the common benefit of the community, the worker, the manager and the employer—understanding and intelligent direction of the principles of administration and management which govern organized effort for accomplishing industrial and other social purposes.

2. To secure the gradual elimination of unnecessary effort and of unduly burdensome toil in the accomplishment of the work of the world.

3. To promote the scientific study and teaching of the principles governing organized effort, and of the mechanisms of their adaptations and application under varying and changing conditions.

4. To promote general recognition of the fact that the evaluation and application of these principles and mechanisms are the mutual concern of the community, the worker, the manager and the employer.

5. To inspire in labor, manager and employer a constant adherence to the highest ethical conception of their individual and collective responsibility.

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The membership of the Society comprises Members, Junior Members, Honorary Members, Life Members, Firm Members, Contributing Members and Student Associates. Application for membership should be made on a regular form which may be secured from the Society. New members may be elected directly to the grades marked*.

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3. *Honorary Member*: A member elected by the Board of Directors for exceptionally distinguished service in the advancement of the science and the art of management.

4. **Life Member*: Any Member who has prepaid all dues by the payment of $500.

5. **Firm Member*: A firm or organization interested in the advancement of the science and the art of management which desires to make the service of the Society available to members of its organization. A firm member designates two representatives (who may be changed from time to time at the organization's discretion) who have all the rights and privileges of membership except the right to vote and to hold office. Annual dues, including two subscriptions to the Bulletin, $40.

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SPRING MEETING

Philadelphia, Pa.

April 30, May 1, 1931

(See page 18)

Comment

IN THIS issue we continue publication of the papers and discussions of the December Meeting. Mr. Platte presents an interesting case of the manner in which scientific management is being applied in the field of marketing. It represents extension of the effort to stabilize operations through research, standardization and control. The first efforts to secure stability were concerned with production but so long as the flow of orders remains unstable, it is impossible to secure complete stability of the shop. Today efforts are being made by application of the same principles to secure stability in the flow of orders, both as to total volume and the relative proportion of separate items. Stabilization of selling promotes stabilization of production.

THE industrial code was one of the noteworthy products of the December Meeting and has attracted national attention. To be sure there may not be in it an item which has not already been practiced or advocated, but the assembly in one document of the progressive concepts pertaining to employer-employe relations by so representative and responsible a group as the Taylor Society is an event of public significance. It is interesting to recall that twenty years ago many believed that scientific management was harsh and cold, and looked upon labor as just another machine! The scope of scientific management is beginning to be understood and appreciated.

IN THESE days when mass production, technological unemployment and discharge of older workers are so much discussed, it is refreshing to realize that there are enterprises "in which ounceage and not tonnage prevails; where diversification prevails over simplification; where the experience of age proves an acceptable substitute for the speed of youth, and where quality and not mass distinguishes the product." Therefore Mr. Henderson's article will be read with interest. It will also suggest the interesting thought that perhaps such industries are not to disappear with the development of mass production, but that, as the latter is applied more and more to the production of commodities of common use, the purchasing power thereby saved by lower costs will be turned to the purchase of a great variety of items distinguished by quality and style, and the two types of enterprise will flourish side by side.

Factors in the Elimination of Distribution Waste[1]

A Case in Which Research Predetermines Jobbers' Inventories of Rugs by Seasons, Prices, Weaves, Grades, Sizes and Patterns

By F. A. PLATTE
Firm Member, Anderson, Davis & Hyde, Inc., New York

YOU MAY remember the phonograph record of the blackfaced comedians, Moran and Mack. Mack tells Moran about his experiences as a farmer.

Moran asks, "Well, what did you raise?"

"We raised horses and pigs," is Mack's reply.

"Oh, you raised pigs, eh?"

"Well, we didn't zackly raise 'em. We bought little pigs in April for foh dollars each and sold 'em in August," explained Mack.

"And what did you sell 'em for?"

"Uh—foh dollars each," is the reply.

"What! You mean to tell me you bought little pigs for foh dollars each in April and sold 'em for foh dollars each in August? You can't make any money that way," said Moran.

"Yeah; we found that out."

The present-day manufacturer is not in quite this distressing predicament but he *has* found out that he can't make *as much* money as he should because it is costing him too much to distribute his products. His selling expense has been increasing constantly. It is eating up more and more of his profits. "What to do about it," is the question manufacturers in practically every industry are asking themselves.

It is my purpose today to tell you what *has* been done about it in *one* industry, not because I believe that the particular remedy which I shall describe will prove a panacea for all distribution ills but because I think that its underlying principle may have general application.

Just as in the past the engineer was drafted to reduce excessive production costs, so today the analyst is being requisitioned to solve the problem of mounting sales costs. Production problems were solved by eliminating waste; time was being wasted, energy was being wasted, material was being wasted. But at the root of this waste evil was ignorance and indifference.

The cost of distributing merchandise is also high because of tremendous waste. Here, too, ignorance forms the cornerstone upon which waste builds its edifice.

Most distributing mechanisms as they exist today are the result of haphazard evolution. Few are the result of plans conceived out of facts and organized by logic. Each part of the distribution channel regards itself as an entity only distantly related to the preceding or succeeding link. Each part is encumbered by traditions; past experience is a guide for the future.

In the past the manufacturer has sold either direct to the consumer, to a retailer, to a jobber, to a broker or a combination of several of these. Generally there were four links in the chain of distribution. The contact between each two links in the chain was in the nature of a vendor-buyer conflict. The more links in the chain, the more of these conflicts. Such conflicts are of course a great source of waste. That this waste existed has long been recognized and has caused much talk and some action tending toward "the elimination of the middleman." Such companies as the Realsilk Hosiery Company sought to deal directly with the ultimate consumer. Companies like Simmons cut out the jobber entirely and sold directly to retailers. This elimination of the middleman has not as a general rule helped to solve the problem of reducing selling costs as was expected. In fact many of those who were ardent supporters of the "direct to consumer" principle have now discarded the idea as theoretically sound but practically difficult to operate at a profit. One of the well-known former exponents of the idea gave, several weeks ago, as his reason for the failure of the mechanisms which eliminated the middleman, the substitution of an employe for a man in business for himself. The employe cannot possibly have the incentive to do more than the employer can force out of him. The distributor, if he has his own business, will have the incentive. He may require education and training but he has always before him the incentive of greater profits for himself.

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[1] Paper presented before a meeting of the Taylor Society, New York, December 3, 1930.

The real solution would appear to be the planning of a new distribution mechanism designed to meet the demands of each industry, its products and its markets, supplemented by a thorough training of its personnel. There is only one agent in industry who can take upon himself this task of planning and training; that is the manufacturer. No doubt many of you know some companies which have made considerable progress in organizing such a system for themselves. It has been my good fortune to participate in the planning and execution of such a project. The fact that definite results are in evidence makes me feel that some small part of that which is to follow may prove helpful to those of you who are also wrestling with sales problems.

What I am about to describe to you is a portion of the work done by W. & J. Sloane, as selling agents for a group of manufacturers of floor coverings, in the organizing of their distributing machine. Our company acted as marketing counselors to Sloane in the development of this plan.

In November, 1928, W. & J. Sloane were confronted with the problem of selling the output of four large mills, Alexander Smith and Sons Carpet Company, C. H. Masland & Sons, Inc., The Barrymore Seamless Wiltons, Inc. and the W. & J. Sloane Manufacturing Company, makers of linoleum. This represented a combined annual volume of about $45,000,000. Sloane then had a few salesmen covering the retail trade. They also had a sales force selling to jobbers. Most of the jobbers carried a host of other products besides floor coverings. Their interest was consequently divided.

Distributors' Sales Areas

After considerable study it was decided to coordinate a group of existing jobbing organizations into a distribution network rather than to establish a direct selling force. We first determined on the distribution centers. Then we selected those jobbers who appeared to have the best management and the best facilities for rendering service. In a number of places we had to leave blanks in our original set-up.

A written sales policy was then drawn up in such a manner as to place the jobber in the position of an integer in the distribution system instead of a customer of the manufacturer. It was necessary to hammer on this continually in order to convince the jobber of his true status. His past experience had been diametrically opposite to this and we had difficulty in convincing him of our sincerity. We had to eliminate all reference to the word "jobber." We can definitely say that today he regards himself as a "distributor," a part of our machine, interested in the success of our policy *because he has profited under that policy.*

The next job was to solve a riddle; namely, the confused price situation in the floor-covering industry. As late as 1928 a large part of this industry's output was disposed of by auction to jobbers and retailers. This resulted in an infinite number of prices everywhere. No one knew what the price on a rug should be since he did not know what that rug cost him. He bought a job lot and tried to average out a profit for himself.

We solved this riddle by establishing zone prices on all our merchandise for all our distributors. This pricing involved the determination of basic factory costs, transportation and handling costs and the establishing of definite profit mark-ups for our distributors. We then made all our distributors adhere to our price schedules. We were told again and again that we were attempting the impossible, but now, two years later, I can report that the plan is operating successfully. Even in this year of depression, schedules have been maintained and distributors are enthusiastic in their support of the plan. I am sure that none of them would care to return to the chaotic distributing methods of the past. The work of organizing that machine is far from finished, for the element of time is all important. It was planned that this basic work should extend over a period of five years. We are now beginning only our third.

Although Sloane now had a distributing machine, they still had to make it work effectively. They made it work and it is working better every month.

However, it has required constant plugging and education.

Sloane realized that if an efficient job of distribution was to be done, each distributor had to be made into a self-sustaining, profitable unit, serving a logical area. Each distributor had to be converted from a haphazard "trader" into the equivalent of a branch sales and warehousing organization. The advantage of this was that the distributor was operating his own business. He was not an employe. He had the incentive to work. And he had the incentive to learn more about his business and how to conduct it at a greater profit to himself.

This was obviously an educational job for Sloane—a five-year task. The objective was to leave in each center a strong independent distributor, combing the territory thoroughly, operating at a profit and refraining from extending his activities so far afield as to endanger the operations of other Sloane distributors.

In order to show you how Sloane went about this task, I have selected the Minneapolis distributor as a case example.

A study of such a jobbing area from the point of view of sales indicates that about 85 per cent of the total volume obtained would be secured from the lightly shaded area in Figure 1. Although a certain amount of sales can be obtained from the areas farther from the distribution center, in many cases this increase in volume can be obtained only at a very high selling cost. A study of almost any other so-called jobbing area will demonstrate to you that similar conditions apply.

We recommended that each distributor make an analysis of his own sales by counties to see if he could isolate that nucleus in which he could make the greatest profit per dollar of sales because of low selling cost.

That nucleus obtained by the study suggested would give what we term a distributor's sales area in counter distinction to a jobbing area. While the Minneapolis distributor will send salesmen outside of this distributing area for purposes of training and in order to secure orders from certain old accounts, his real activity will take place within the confines of the shaded area. Figure 1 also shows the extent of normal operations of other Sloane distributors. We believe that a wise manufacturer will so arrange his distribution system that he can minimize duplication of activity by his own distributors; in other words, prevent them from taking business away from each other. Some duplication must of necessity occur, for it is impossible to develop sharp lines of demarcation. If, however, these overlapping zones are made as small as possible there will be less waste of sales effort on the part of all distributors, with a resultant decrease in selling expense and a net increase in profits. In any study of a distributor territory this internal competition within the network must be recognized.

When the territory of major operation had been outlined and the boundaries of competition within the distributing network established, the next step involved the evaluation of that territory, preferably by counties, in such a manner that the distributor might secure those necessary yardsticks that would enable him to determine the success or failure of his own operations, not only as a whole but also in specific districts. Figure 2 shows such an evaluation for the Minneapolis territory. Recognizing the fact that other manufacturers will be operating in this territory either directly or through other distributors, we have applied to these total market figures national percentages and have obtained thereby a picture of the amounts which Sloane can readily hope to secure. In many territories the position of a Sloane distributor will be so dominant that he can hope to obtain greater sales than these national averages would indicate.

After securing what we call the Sloane County Evaluation in total dollars, the next step was to break down these figures by *Barrymore, Smith* and *Masland,* the mills for whom Sloane are selling agents.

In the Minneapolis territory pictured in Figure 2, there is a total market, according to forecast, of approximately six and one-half millions of dollars, of which Sloane has every reason to expect at least $1,630,000, based on national averages.

We have stated that internal competition with other Sloane distributors must be recognized due to the slight overlapping of sales territories. We must also recognize the fact that large department stores are loath to place their orders through distributors. For that reason the Minneapolis distributor does not expect to obtain 100 per cent of the total Sloane business in his territory. Furthermore, the farther a retailer is removed from the distributing point the more difficult it becomes for

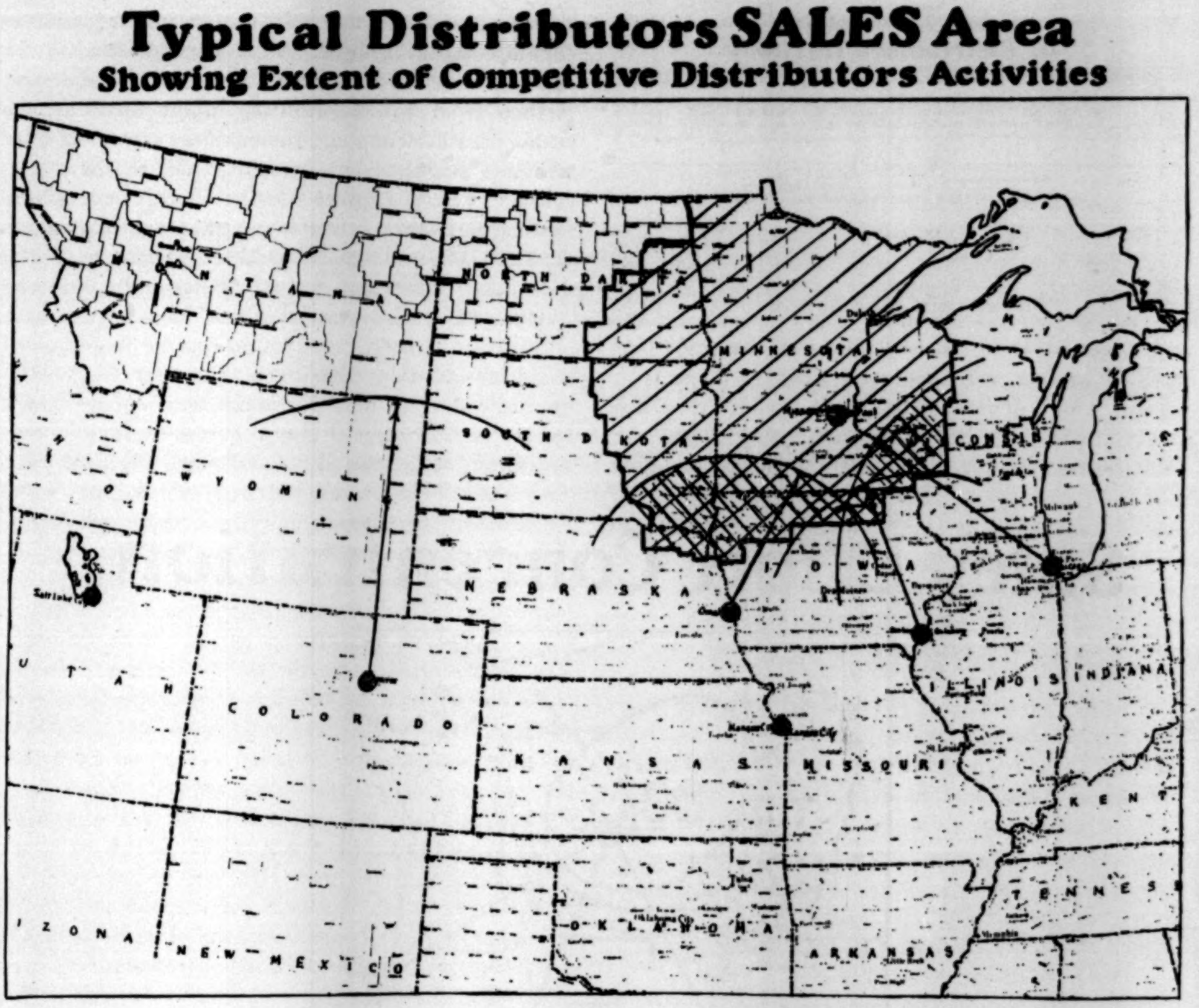
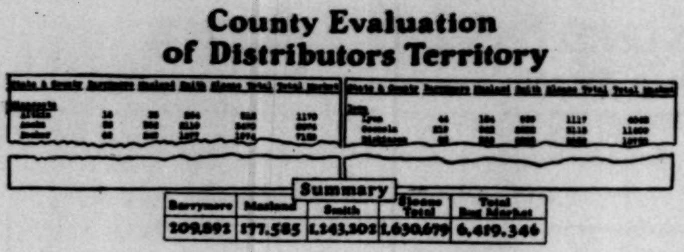

Typical Distributors SALES Area
Showing Extent of Competitive Distributors Activities

Figure 1

him to render adequate service and the more easy it becomes for another distributor to compete for that business. For that reason we have divided this sales area into percentage zones. The extent of these zones is determined entirely by the location of other distributing points. It is perfectly obvious that a Chicago distributor will be able to extend his operations more than one-half of the distance from Chicago to Minneapolis, for the simple reason that a Minneapolis distributor must ship back over the same route that the merchandise has traveled in going from the factory to his warehouse. In other words, such merchandise must travel a longer distance to reach its ultimate destination than if shipped out of Chicago. This is uneconomical, of course, and serves to demonstrate why distributing areas normally will extend farther westward than eastward from a distributing point.

Another way of demonstrating the same characteristic is shown in Figure 3. The figures at the bottom of the chart indicate how rapidly sales opportunities diminish after a certain distance from the distributing point has been reached. It is also interesting to note that the cross section from Minneapolis to Omaha favors the Minneapolis jobber much more than that cross section established between Minneapolis and Chicago. There the Chicago jobber has the advantage.



County Evaluation of Distributors Territory

Summary

Barrymore	Masland	Smith	Sloane Total	Total Rug Market
209,892	177,585	1,243,202	1,630,679	6,419,346

Figure 2

Distributors' Sales Budgets

On the basis of the soundness of the principles outlined above we developed county expectancy figures which demonstrated what volume that distributor hoped to get in any one year out of the total Sloane market of $1,630,000. In the counties centering about his distributing point he can reasonably expect to get 80 per cent of the Sloane market, which will decrease as he gets farther and farther from his distributing point until at the boundaries he will share his business almost equally with his neighboring distributor. When these percentages were applied to the county evaluation figures in Figure 2, we found that a total volume of $1,083,000 was a reasonable expectancy for a distributor operating out of Minneapolis.

It might be that when the actual sales figures were obtained this distributor would find he had secured a volume of only $600,000 in the first year. It is perfectly obvious that this is not an adequate return for his territory but it is also perfectly obvious that he cannot reach the $1,000,000 mark the first year.

Sales Effort Concentration

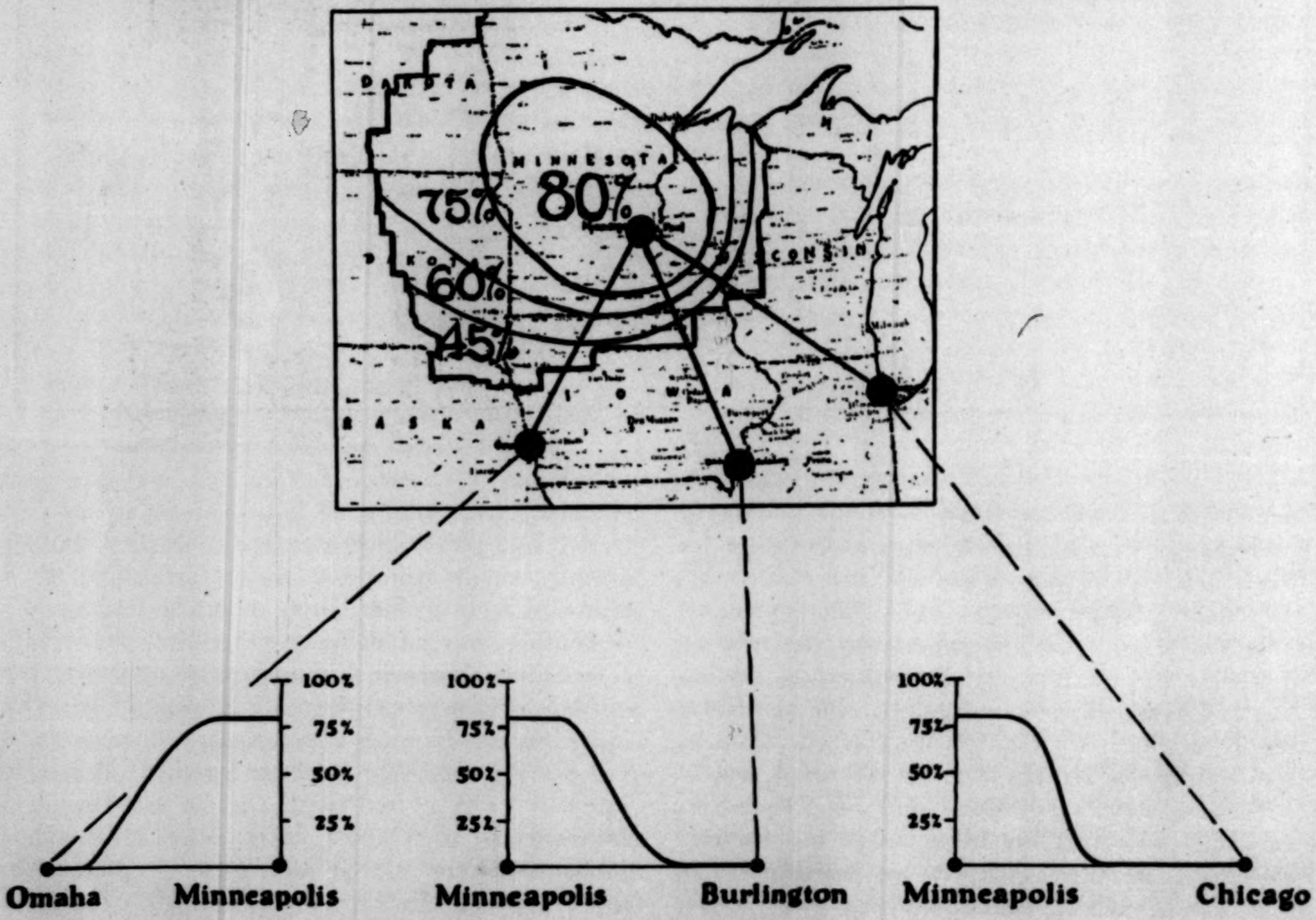


Figure 3

Knowing, however, that there is an easy $1,000,000 worth of business available to him, he should plan to reach that $1,000,000 mark in from three to five years.

These county expectancy figures can at the close of the year be utilized by the distributor to determine just where he is weak and where he is strong. Comparison with previous years' sales is not a true indicator of success. If the previous year was very poor and this year somewhat better, the distributor might be lulled to sleep by the improvement, whereas a comparison with an evaluation of that market will cause him dissatisfaction and influence him to apply remedial measures at the points where they are most needed.

By summing up all these computations in Figure 2, we obtain the distributor's sales budget. This shows that there is a total available rug market of about $6,500,000 in the Minneapolis territory. If we assume this territory is just an average one, Sloane can hope to obtain through its various distributors and directly a total of $1,630,000. Let us assume that the distributor is established and has been enjoying a volume of from $800,000 to $1,000,000. When a distributor has reached a point where his sales are equal to the above computed sales expectancy he can still further expand his market in a number of ways. First, the forecasted figure of $6,500,000 is not a static one. With increasing population and increasing standards of living, the floor-covering market too is increasing. If his territory is not influenced by any extended local disturbances, such as floods or industrial strikes, he can expect to see his market expand.

Furthermore, the total Sloane figure of $1,630,000 is not static. Sloane policies and Sloane advertising employed on a national scale will build up a demand, a part of which will be reflected in the growth of this $1,630,000 figure. If a distributor renders an economical service to his retailers he can rest assured that at least in his territory national averages will be exceeded.

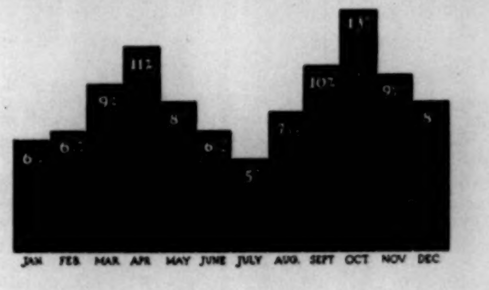
We have found many instances where distributors have fought for an increase in sales by overextending their territory. We earnestly recommended that each distributor study his territory as outlined above to the end that he might increase his sales within the logical distributing area. By doing so he can realize a greater net profit per dollar on sales. I believe that the above example demonstrates that there is much opportunity for expansion at home.

For purposes of analysis let us assume that the Minneapolis distributor has established for himself a sales expectancy of $1,000,000 for the ensuing year.

Seasonal Variation

In order to plan his activities so as not to overload his inventory and yet always be supplied with adequate merchandise to satisfy his retail customers, a distributor should know the seasonal variation of demand in his own territory.

Approximate Monthly Percentage of Rug SALES by Distributors



Approximate Monthly Percentage of Rug PURCHASES by Distributors

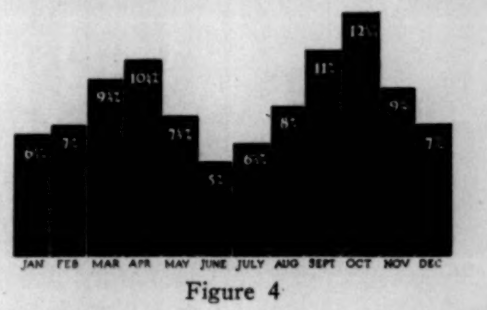


Figure 4

Figure 4 shows variations, on the basis of national averages, both of sales by distributors to retailers and of purchases by distributors from manufacturers. Although there is no appreciable variation in the characteristics of the two there is a slight difference in the per cent of annual volume obtained in each month.

A more usable picture of monthly variations was obtained by setting up graphically the per cent of *seasonal* volume in each month, under two headings. The spring season covers the months from January through June and the fall season the months from July through December.

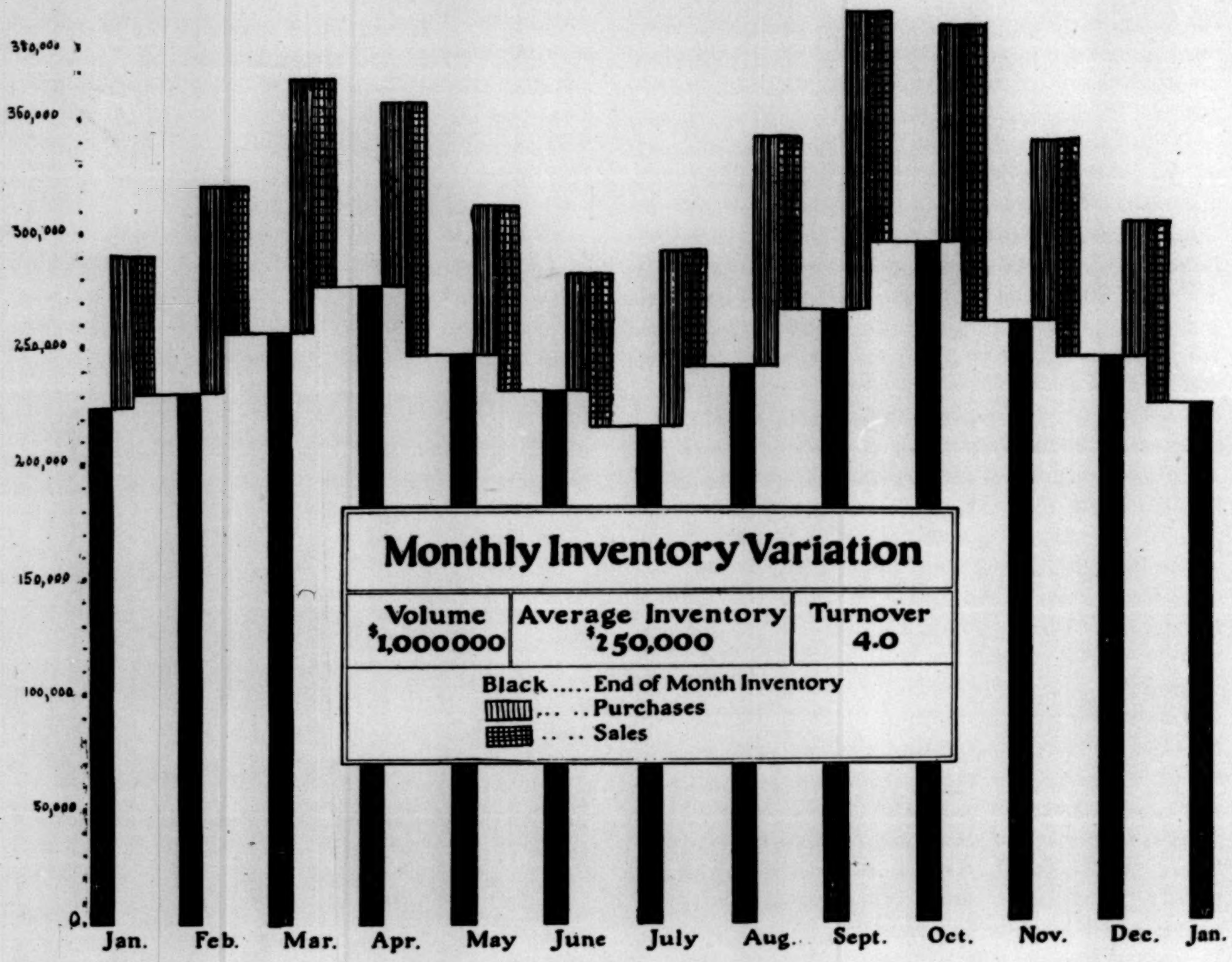


Figure 5

Monthly Inventory Variation

We have now seen approximately how the volume of $1,000,000 will be distributed by months. Figure 5 shows how that variation will affect an inventory.

The particular distributor we have in mind has been securing a turnover of about three times. He knows that he can reduce his capital investment and hence make a greater profit by increasing that turnover. He finds that he is so located geographically that he can secure fill-in merchandise from the mill readily. He therefore lays his plans to obtain a turnover of four times. For the present we shall leave this as an assumption and demonstrate later how this turnover can be improved even more. If we assume a volume of $1,000,000 in the year and plan on a turnover of four times, we imply an average inventory of $250,000. Average inventory is determined, of course, by taking the average of twelve end-of-month inventories, measured either in terms of cost of goods or cost of goods plus mark-up. Whichever of these two methods is used, however, it must be used continuously. The only advantage of utilizing cost of goods is that the confusion that might be produced by mark-downs on obsolete merchandise is reduced. In January, we normally find sales comparatively low. We expect a low inventory in January after the fall peak. We, therefore, start our theoretical distributor with an inventory of $225,000. His purchases during January, when added to his January 1 inventory, bring him up to $290,000.

During the month of January, however, sales reduce this to $230,000, so that he starts the month of February with a $230,000 inventory. On the chart black indicates the end-of-the-month inventory, the vertical hatching indicates current purchases and the cross hatching current sales. The average of the twelve black columns is $250,000.

Many considerations would vary such a program in any one locality, such as the purchase of special merchandise; for example, dropped patterns. Variations in seasons in different geographical localities are another factor. Nevertheless, these two variations can largely be eliminated and a business planned on a definite turnover as a result of a study of a distributor's past performance records.

This chart also shows another thing. We have seen that the black columns represent end-of-month inventories. Down at the very bottom of these columns is the inventory which has remained in stock for several seasons. At the top of the column is the inventory which has just been brought in from the mill upon the distributor's order and which the distributor believes to be readily salable. At the present time too much of the merchandise that is being brought in is gradually finding its way down to the bottom of the column and resting among the merchandise that has been on the shelves, or in the warehouse, for several years. Such obsolete merchandise, of course, has a greatly depreciated value. It represents capital investment and reduces turnover. It eats up profit. If we can prevent or minimize the acquisition of merchandise which must ultimately find its way into dead stock, we shall have determined another way of increasing turnover.

Composition of Rug Inventory by Weaves, Grades and Sizes

A complete distributor's rug inventory should, of course, contain a certain number of rugs in each of the four major classifications—axminster, velvet, tapestry and wilton. Although the long-time trends demonstrate such things as the decrease in the use of tapestries, at the present time national averages indicate that about 57 per cent of the total number of carpet-sized rugs in a distributor's stock should be axminsters. This will represent about 58 per cent of his capital investment. About 27½ per cent of that capital investment will be velvets, 6 per cent tapestries and 8 per cent wiltons. Certain localities will, of course, require, a higher wilton inventory; others may require a higher axminster inventory. The answer to the question as far as any one distributor is concerned can readily be determined by analyzing his own past sales and sales trends.

After it is determined what proportion of an inventory should be axminsters, the next question is one of grades. A breakdown of the axminster inventory, arranged in order of high, medium and low grades, shows that 3 per cent of the carpet-sized rugs (or 4¾ per cent of the dollar inventory) should be "Smiths"; 18 per cent (or 22 per cent of the dollar value) "Yonkers" and "Yonkers Specials"; 27½ per cent (or 28¾ per cent of the dollar value) "Carletons"; 51½ per cent (or 44½ per cent of the dollar value) "Ardsleys."

A similar breakdown for the various grades of velvet rugs shows that 12½ per cent of the carpet-sized velvets (or 21½ per cent of the dollar inventory) should be "Irvingtons" and "Meadowbrooks"; 49½ per cent (or 50 per cent of the dollar value) "Colonials," "Palisades" and "Argonnes"; 38 per cent (or 28½ per cent of the dollar value) "Katonahs," "Marvels" and "Fernbrooks."

In the case of tapestry rugs the inventory is about equally divided as to numbers, between the high and medium grades. Only 6 per cent of the inventory is in the low-grade rugs.

Sixty-two per cent of the wilton inventory is in low-grade rugs while the remaining 38 per cent is divided among three higher grades.

Before we continue let us sum up what has been accomplished. We have planned on a sales volume of $1,000,000. We have built up an approximate inventory based upon a predetermined turnover. We have broken down this inventory by weaves. We have determined the per cent of each weave to be applied to each grade.

To keep our stock truly balanced we must have a proper division by sizes. Figure 6 shows such a division, based upon national averages obtained over a period of years.

By applying all of the characteristics outlined above we obtained a picture of the composition of a five-thousand, carpet-sized rug inventory; first, by weaves, then by grades within the weaves, and finally by sizes. Figure 7 shows this graphically.

Composition of Rug Inventory by Sizes

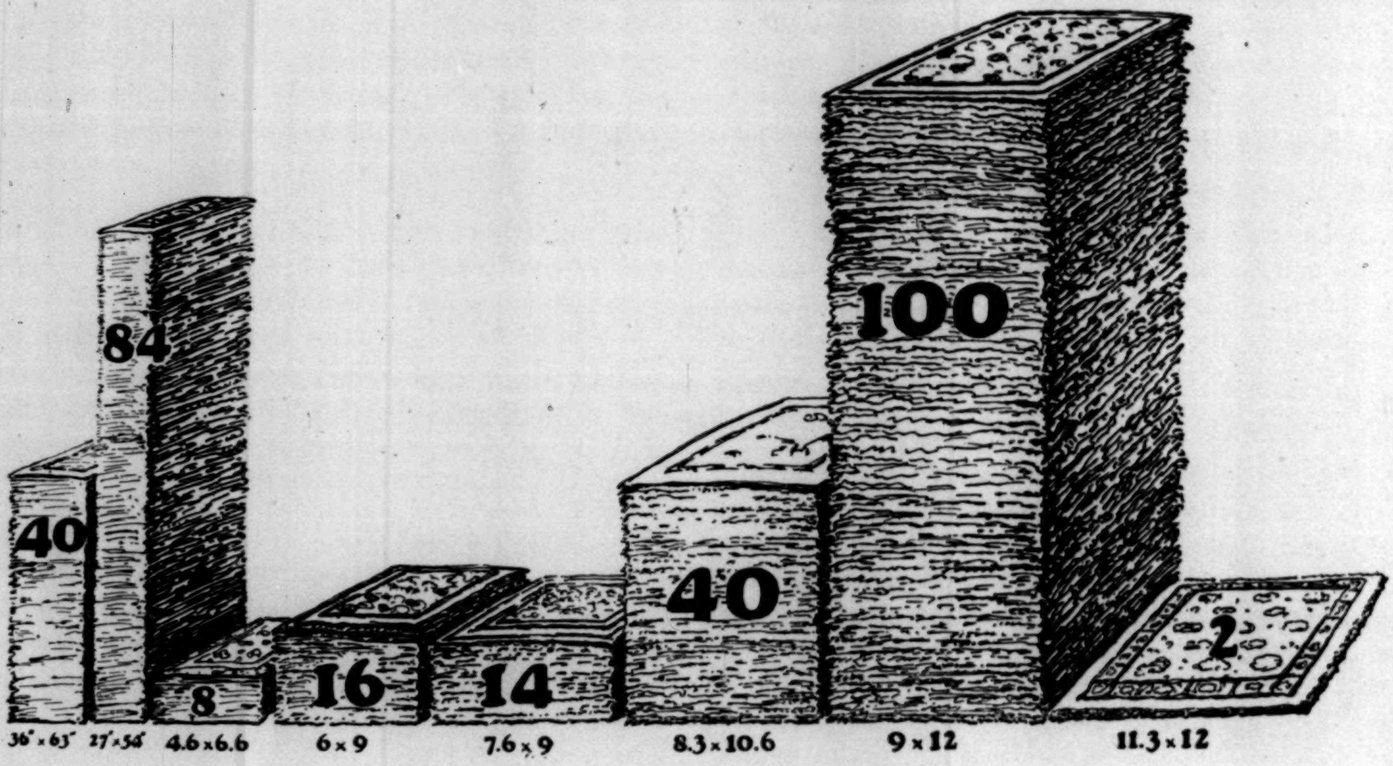


Figure 6

A similar breakdown of a $100,000 inventory by weaves and grades in dollars follows.

Axminster		$58,500
Smith	$ 2,800	
Yonkers-Yonkers Special	12,900	
Carleton	16,800	
Ardsley	26,000	
Velvet		27,500
Irvington-Meadowbrook	$ 5,800	
Colonial-Palisade-Argonne	8,700	
Katonah-Marvel-Fernbrook	13,000	
Tapestry		6,000
Manor	$ 3,100	
Nyack	2,700	
Beacon	200	
Wilton		8,000
Barishah	$ 1,500	
Barazak	900	
Washington	1,700	
Malabar	3,900	

It must be noted that slightly over one-quarter of the total inventory is in one axminster grade. It will also be noted that the number of wilton rugs is comparatively small—considerably smaller than tapestries—and yet the capital investment required to keep a balanced inventory will be somewhat greater.

Best Selling Patterns

In the development of such an ideal inventory it becomes necessary to prevent the acquisition of

Composition of a 5000 Rug Inventory
by Weaves – by Grades – by Sizes

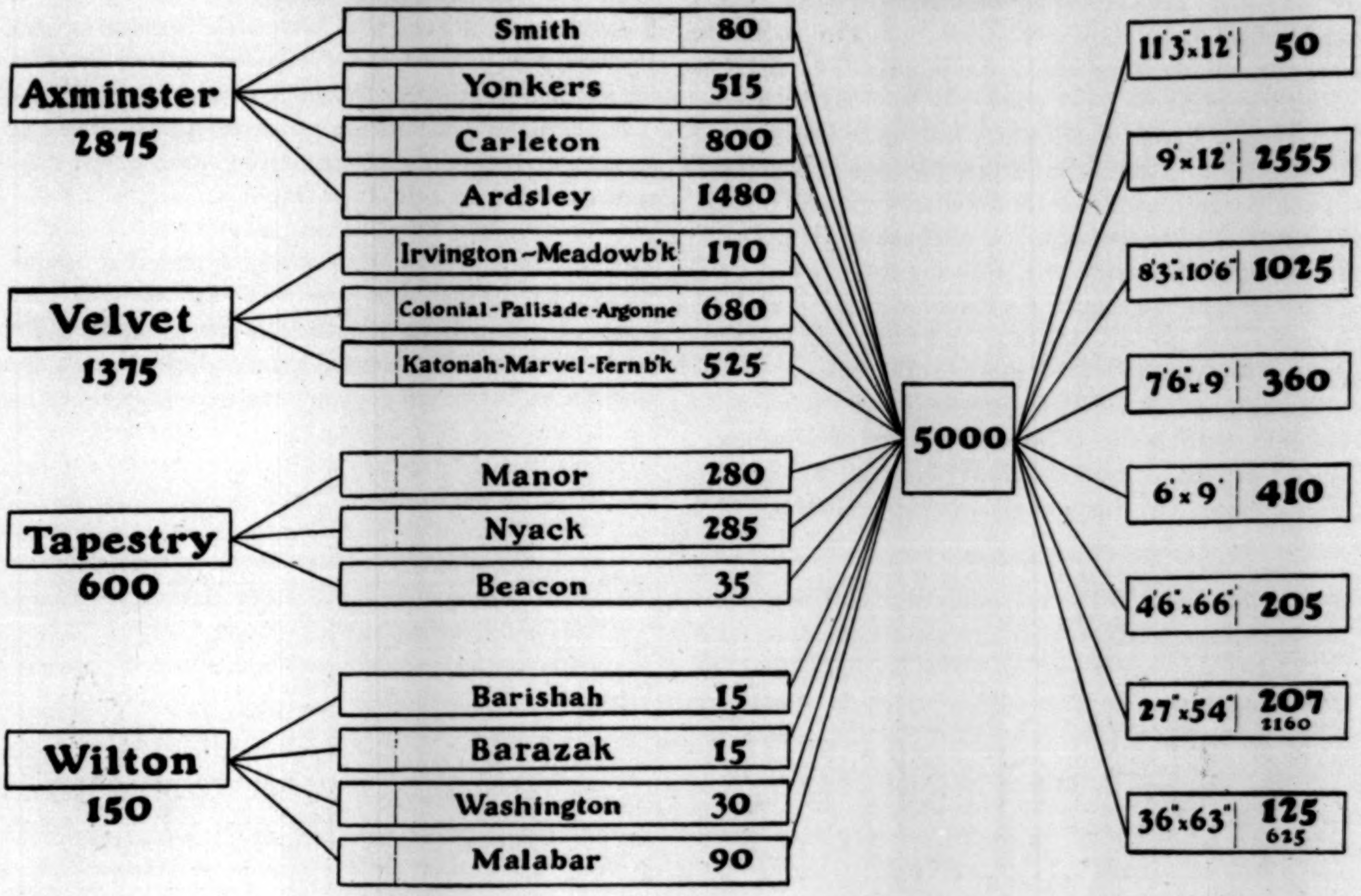


Figure 7

unsalable patterns. Hence Sloane created a Best Selling Pattern Service based on current information as to the relative salability of the patterns in each grade. This service applies to each grade—Smiths, Ardsleys, etc. Our study revealed that in a line of eighteen Smith axminster patterns one pattern will be so outstanding as to command 15 per cent of the total sales volume for that grade. The second will take about 11 per cent, the third about 9 per cent. In other words, only three out of eighteen patterns will account for 35 per cent of the total volume of all patterns.

As styles change, so the demand for specific patterns changes. Therefore Sloane continues to keep its Best Selling Pattern Service so that distributors may be currently appraised of the actual demand for specific patterns. The distributor who avails himself of this service and purchases that merchandise which currently demonstrates its salability runs no risk of loading his stock with unpopular patterns that in a short time become "dead stock."

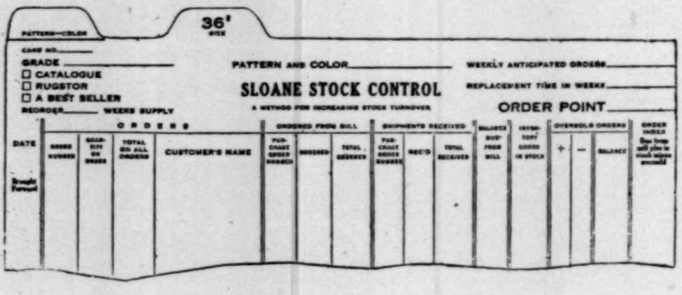
We appreciate that those patterns which have demonstrated their leadership on a national basis will not be the leaders in all localities. However, it is possible to control such a situation by applying corrective factors based on analysis of each distributor's own sales by patterns.

The Ardsley line consists of thirty-six patterns. The tremendous differences found in the Smith axminster line, consisting of only eighteen patterns, are not found here. Nevertheless, twelve patterns or one-third of the total number account for approximately 60 per cent of the total sales.

Inventory-Control System

While the above methods of establishing inventories are absolutely sound, the actual figures used are national and must be modified to suit local conditions. After they have been made to fit such local conditions they must be modified currently to keep abreast of local changes. We have, therefore, urged upon distributors the adoption of a stock-control system similar to the one developed for the control of our own inventory in the mills. (Figure 8). The services of our sales promotion department were made available for the installation of this system. It requires a card for every pattern, for every size, for every grade and for every weave, in other words, for every item in the line.

When demand is likely to be low, stocks are kept low. When the peak-sales season arrives, the inventory-control system predetermines the quantity necessary to supply all normal demand.



PATTERN—COLOR

36'
SIZE

CARD NO.______
GRADE ______________
☐ CATALOGUE
☐ RUGSTOR
☐ A BEST SELLER
REORDER______ WEEKS SUPPLY

PATTERN AND COLOR______________

SLOANE STOCK CONTROL
A METHOD FOR INCREASING STOCK TURNOVER

WEEKLY ANTICIPATED ORDERS______
REPLACEMENT TIME IN WEEKS______
ORDER POINT______

	ORDERS				ORDERED FROM MILL			SHIPMENTS RECEIVED					OVERSOLD ORDERS			ORDER INDEX
DATE	ORDER NUMBER	QUANTITY ON ORDER	TOTAL ON ALL ORDERS	CUSTOMER'S NAME	PURCHASE ORDER NUMBER	ORDERED	TOTAL ORDERED	PURCHASE ORDER NUMBER	REC'D	TOTAL RECEIVED	BALANCE DUE FROM MILL	INVENTORY GOODS IN STOCK	+	−	BALANCE	[illegible]
Brought Forward																

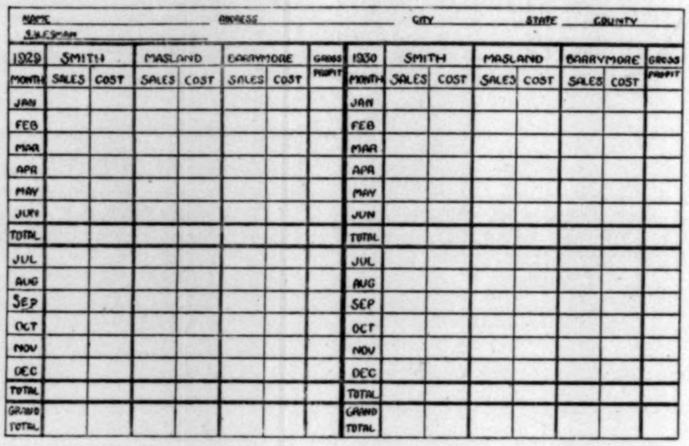
Figure 8

Salesmen's Territory

The complete procedure outlined above for analyzing the whole distributor's territory can be applied to advantage in analyzing the territory of each salesman. Only by setting up a correct yardstick with which to measure results obtained by the salesman can any guide be found which will determine whether or not such a salesman is an asset or a liability. We have taken an area which might constitute a typical salesman's territory. We have listed the counties comprising this territory together with the sales expectancy of each. We could further break this down into seasons if we chose and thereby obtain a measure of results by seasons for each salesman. A picture of those localities in which the salesman has been comparatively weak is also given. Such data serve as the bases for salesman's quotas.

There are about three thousand counties in the United States. Probably no distributor's territory will have more than a couple of hundred of them. It should not be a very complicated matter for a distributor to utilize the Sloane evaluation figures in order to obtain these yardsticks for the few salesmen operating out of his office.

It might be desirable to go even further into this setting up of yardsticks and list towns with the number of retail outlets in each, as we have done. We have taken only furniture stores, but a distributor might go even further and list those department and general stores known to have floor-covering departments. A comparison with these figures will determine whether or not the distributor is securing proper representation in the retail stores of his territory. It will also serve to acquaint the distributor with the salesmen's activities in the opening up of new accounts.



NAME______ ADDRESS______ CITY______ STATE______ COUNTY______
SALESMAN______

1929	SMITH		MASLAND		BARRYMORE		GROSS	1930	SMITH		MASLAND		BARRYMORE		GROSS
MONTH	SALES	COST	SALES	COST	SALES	COST	PROFIT	MONTH	SALES	COST	SALES	COST	SALES	COST	PROFIT
JAN								JAN							
FEB								FEB							
MAR								MAR							
APR								APR							
MAY								MAY							
JUN								JUN							
TOTAL								TOTAL							
JUL								JUL							
AUG								AUG							
SEP								SEP							
OCT								OCT							
NOV								NOV							
DEC								DEC							
TOTAL								TOTAL							
GRAND TOTAL								GRAND TOTAL							

Figure 9

In the territory referred to as a typical salesman's territory the sales expectancy is given at $179,000, whereas the total market in this territory is over one million dollars. In other words, $179,000 is not the ceiling; it is not the maximum that can be obtained by any one distributor.

There are innumerable methods of recording sales. We felt that it would be advantageous to the distributor to use a record similar to that shown in Figure 9. This could not be too elaborate as the distributor was not equipped to handle a complicated system.

A card is prepared for every customer. On that card is recorded for every month the total sales in dollars, broken down by mills; namely, Smith, Masland and Barrymore. At the same time there is also recorded the cost of this merchandise. The difference constitutes the gross profit.

We list these figures by months so that we may have a correct picture of the trend of each distributor's business as well as a basis for comparison with previous years. It is no longer satisfactory to wait until the close of a season, for retailers also are learning the need of keeping a smaller inventory and of filling in as required. They no longer make two purchases a year as was formerly the case. Another advantage is the service a distributor can give to dealers in correcting purchases by seasons.

One of the great advantages of the Sloane plan is to get retailers to concentrate with one distributor and for that reason sales are listed by mills. A customer's record card containing the above information quickly reveals whether the distributor's salesmen are selling the plan properly or devoting themselves to the sale of a small portion of the line. Obviously, it is to the distributor's advantage to have the higher-priced merchandise sold as well as the more popular-priced line, for by increasing the sale of this higher-priced merchandise the gross-profit margin is considerably increased.

Costs are listed to give a quick picture of the gross-profit margin. That salesman who places too much emphasis on the large purchaser and neglects the small retailer will produce for the distributor a very small gross profit which will soon be eaten up by the cost of warehousing, sales and administration. It would be a simple matter for a distributor to make an analysis at the close of each season and plan his sales activities for the coming season on what he has learned by this study. Increasing sales is not enough. An adequate gross profit must also be maintained. It will be noted that two years' sales are recorded on one card. It is even possible to utilize the reverse side of a card and have two more years' records on it. This permits rapid comparison with previous years and quickly reveals the true status of any customer as a profitable or an unprofitable account.

At the close of each season all customers' cards should be totaled and recorded on a county card and all county cards should be totaled and recorded on a sales territory card. The combination of sales territory cards will give a picture of the total distributor's business.

By comparing these figures with the yardstick previously set up, the distributor will rapidly obtain a detailed and accurate picture of his past six months' operations. In themselves these pictures are of little value; as a guide to further planning they are indispensable. Unprofitable accounts can be easily weeded out or so handled as to become profitable. Unprofitable salesmen can be readily detected, eliminated or placed on a remuneration basis that will show a net profit to the distributor. Those sections of the territory which are weak are cast into bold relief and set aside as areas in which the distributor can place greater sales promotion emphasis during the coming season. Furthermore, it is in these areas that Sloane's sales promotion men can render the most effective help to the distributor.

The cost of keeping these records is but an infinitesimal part of the gain resulting from this added sales control.

Conclusion

This is just one phase of the work done by one manufacturer in organizing his distribution system so as to secure the maximum of sales with the minimum of cost. What has been explained here has been done with each distributor in the network.

In addition there have been the organizing and training of the manufacturer's own salesmen who cover that part of the trade which insists on buying directly from the mills. There has been the training of a sales promotion staff which is constantly in the field selling the plan (*not* the merchandise) to retailers, assisting in the training of distributors' salesmen and performing a host of other functions which should facilitate the smooth flow of merchandise through the distributing channel. There has been the establishing of an efficient inventory-control system for the mills so as to make it possible to supply all normal demand without excessive investment. There has been the organizing of a sales-control system so that we can determine how well the sales plan is operating at any time; how well the various units in the machine are functioning.

All of this work has as its objective the elimination of waste in selling. There will always be some waste but we can avoid a large part of it by aggressive management plus intelligent planning. The day of the go-getter salesman is gone. The light of his star is dimmed. No longer does he have the power to wring large orders from unwilling buyers, much to the delight of his boss and the great profit of his company. He has gone the way of the war hero who leaped to the ramparts waving his country's colors and urging his comrades on to victory. Selling today, like trench warfare, requires careful planning and trained troops. Victory and profit go to him who has planned best and trained most carefully.

Discussion

Charles P. Staubach, Chairman.[2] I have made note during Mr. Platte's address of certain points on which I should like additional information. As some of these may be in the minds of others here I am going to put them briefly and ask Mr. Platte to elaborate upon them.

1. It is my understanding from the paper that Sloane distributors do not handle competing floor coverings. They may be jobbers for non-competing types of floor coverings and other household articles but as far as Sloane is concerned they are distributors. If I am not right on this point I should like to be corrected.

2. The work of these distributors for Sloane differs from that for other manufacturers in that the Sloane plan, just described, suggests a restriction of territory for each distributor. They are shown that it is to their advantage to keep within this territory but their work for other manufacturers may take them far afield. Is this largely responsible for overlapping distributor territories or are there other reasons?

3. Mr. Platte stated that the factors in the establishment of zone prices were basic factory costs, distributors' profit mark-up, and transportation and handling costs. I suppose we can assume that the first two factors are practically the same in all cases and that the zone price is therefore a direct reflection of the distance of the distributing center from the factory. I am wondering, therefore, if the result would not be two different prices on goods offered for sale midway between two distributing points, for example, Chicago and Omaha?

4. I should like to ask Mr. Platte also how he arrived at the value of the annual total rug market. Many manufacturers would like to have an idea of the total possible market for the products they and their competitors are making. Some pointers on the methods of arriving at this figure for each distributor territory and each county would also be helpful to all of us.

5. And what was the guide used to determine what proportion of the total should go to Sloane in each territory?

6. I note that the Sloane total in each territory is broken down into weaves and that the proportion assigned to each weave varies widely in the different counties. If the method used in arriving at these variations could be described it would be very helpful.

7. It is my understanding that the difference between the Sloane quota in a territory and the distributor's quota is supposed to be made up by direct sales to retailers by Sloane and by the sales of other distributors selling in overlapping territories. Am I right in this?

8. Do distributors and retailers report sales figures? There are businesses where sales figures are received from distributors in such a form that they can readily be compiled in the home office by counties and related to the potential markets in those counties in the form of percentages. I assume that this sort of thing would require considerable effort in the case of the Sloane products but I am wondering if it would be considered worthwhile to try to do it.

9. Mr. Platte has stated that the distributor is expected to assume responsibility for only 80 per cent of the possible Sloane market even in the district immediately surrounding the distributing center. I assume that the other 20 per cent is carried by department stores and that in the districts responsible for only 40 per cent of the Sloane market the remainder is carried by direct outlets plus the distributors whose territories overlap. I am wondering if the quotas of these distributors include some percentage of the market in these outside territories or if it is considered satisfactory if the sales of distributors in outside territories offset the shortages in their own outlying districts.

10. I should like to know the distributing centers that serve western North Dakota and eastern Montana. There seem to be no overlapping territories in some of these far western districts and there would, of course, hardly be any direct outlets in these mountainous districts. Does the automobile-using salesman touch them and are the

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[2] Marketing Consultant, Glen Ridge, N. J.

results watched even though no quotas are assigned in these districts?

11. I am wondering if Sloane will not some day come to expect an 80 per cent return even from outlying territories because they are really close-in territories for the individual salesman?

12. I am wondering if Mr. Platte has considered having the county quotas appear on the county record cards to which he referred. This would be a simple device aiding the executive to judge results.

Mr. Platte. Mr. Staubach is correct in his first assumption.

2. On the second question, it is not only the fact that distributors have other products to sell which creates overlapping territories. Before this plan went into effect the distributor may have had a large customer 150 miles from his headquarters. This customer knows him and wants to buy from him, and the distributor wants to keep the customer. The connection is not going to be broken just because Sloane suggests a changed plan.

3. On point three, different prices do exist at points between distribution centers. Distributors quote prices f. o. b. the warehouse and add transportation charges. The center nearest the warehouse may be able to give a better price even in an outlying district because the more distant center, to sell to this same district which may be closer to this center, will have to send the merchandise back over some of the ground traveled and thereby add to the carrying charges.

4. We use the Department of Commerce figures on rugs and carpets as one of the factors in arriving at the value of the total rug market. Population and income—or buying power—figures are also used. I cannot go into the details of the method as that would require a three- or four-hour paper in itself. It will have to be reserved for another time.

5. We know something of the proportion of this total market which Sloane has received in the past and use that as one factor in determining what proportion should be assigned to them.

6. The assignment of different proportions to different weaves in the different counties is entirely a matter of buying power. If you have one county with a population of one thousand and an average buying power, while another county with the same population has an unusually high buying power, the second county will receive a much larger proportion of Barrymores than the first because these are the higher-grade rugs. Each one of the counties has been analyzed and a weighting system worked out which enables us to assign the proper proportion of the Sloane market to the different weaves in each county.

7. Mr. Staubach is correct in his seventh statement.

8. We do not receive sales figures by counties from our distributors. Nor do we get sales figures from department stores. We should like to have these figures, of course, but at present we do not dare hope for them. Even if the mechanism for keeping this information were set up by the distributors I have some doubt as to whether they would let us have the figures.

9. Where a figure of 80 per cent of the Sloane market is used, we assume the other 20 per cent will go as direct sales to department stores. Where a figure of 40 per cent is used, the balance will go largely to mail-order houses and neighboring distributors, with possibly an occasional direct sale. Obviously as districts become more rural, the percentage of mail-order sales goes up. Thus in a district listed at 40 per cent for one distributor, the total sales on Sloane merchandise may be as follows: Distributor A—40 per cent; Distributor B—40 per cent; mail orders 15 per cent and direct sales 5 per cent.

10. As has been previously stated, the Minneapolis distributor will send a salesman out into North and South Dakota. Similarly the Spokane distributor will send a man east into Idaho and Montana, while Denver and Omaha will operate north and northwest occasionally. The territory is not sufficiently productive for a product such as Sloane's to warrant extensive cultivation by any of these distributors. To make a study to determine just what proportion of the market to assign to each distributor as a quota would not be warranted.

11. We do depend on the automobile-using salesman to some extent but I am not sure that we shall change our ratios materially in these districts. Some of the counties north of Minneapolis, for example, will continue to buy from the Chicago distributor. The freight charges are not important for an extra hundred miles or two after the merchandise is loaded on the cars. These people have been buying from this distributor for

years and we would not wish to have them change. A salesman goes to them once or twice a year from Chicago and it would not be advisable to try to bring up the quotas for these Minneapolis territories.

12. All data relative to county quotas, number of prospects, number of accounts, etc., would be listed on the county record cards as Mr. Staubach suggests.

John A. Stephens.[8] My job is to head up an organization, which means that I must delegate jobs in the distribution line to others. I do not therefore feel competent to discuss this paper, but I appreciate being asked.

Mr. Platte said in his conclusion that the old-style salesman was disappearing. I disagree with this statement. I think there are numerous businesses today to which the old-style salesman, operating in a slightly different fashion perhaps, is essential, and I venture to predict that he will continue to be essential to an untold number of them. I have in mind one phase of our own business. We used years ago to manufacture motion-picture film but never marketed it as a finished product. Today we are selling the celluloid base, which is later made up into X-ray, motion picture or ordinary camera film. This business here is pretty much concentrated in the hands of three companies, so that our sales are largely abroad. The product is such that it must be sold soon after manufacture; it cannot be warehoused. We have a London headquarters and one man traveling the European continent. He is the old-style salesman but despite a very intense European competition he continues to bring us in a very sizable piece of film business each year.

I was impressed with Mr. Platte's figures on potential Sloane markets and the distributor's share of them. Of a possible $1,600,000 he states that the distributor should get $1,000,000. It seems to me that these figures may have to be modified, however. Mr. Filene and others believe that the chain-store organization of department stores is increasing. If more and more rugs are bought directly by these department stores the distributor's share may be a decreasing one. And it will be hard to keep a distributor happy if his principal is taking the cream of the sales in his territory. Undoubtedly this five-year plan is a step in the right direction but more time will be required before it can be determined whether it is a success.

Mr. Platte made the statement that waste in distribution, and in production, was due to ignorance or indifference. I do not believe this. I do think that the American business man, in spite of his reputation for efficiency, does not do serious, intense thinking unless he is driven to it. And I think, too, that many of the present distribution problems are the result of the so-called scientific management that was applied in the production field some years back.

You all know that during the nineteenth century, or at least until 1880, a sellers' market predominated. We were building railroads and cutting timber. Our population was increasing at a rapid rate and new territories were being opened up. There was no question of markets. All that was necessary was to make the goods. At the beginning of the twentieth century the great motor industry came into being, bringing with it a wave of shop planning, production scheduling, etc. The result was much more effective production and an accumulation of goods. Then came the war and the building of still more factories without thought of future markets. And what have we today? We have facilities which require intensive use to keep down unit costs, but we have to sell goods in order to use the facilities.

If we had realized thirty or forty years ago that the prime object of industry was the distribution of its products, scientific management might have been applied in this field at the same time that it was applied to production.

In the proceedings of the National Management Congress an article by Virgil M. Palmer, a member of the Taylor Society, states that there are four things essential to waste elimination: (1) mental attitude, (2) knowledge of facts, (3) waste consciousness and (4) action. I am quite in accord though I might put it differently. The first essential to waste elimination is the presence of waste, the second, a stimulation of mental attitude, the third, a knowledge of facts, which brings with it waste consciousness, and the fourth is action.

Mr. Platte, or rather Sloane, has an ideal situation. They have a selling agency for four rugs which are apparently not competitive. Therefore they have diversity to offer the distributor. And Mr. Platte's organization has been wise in using the established network of distribution facilities rather than trying to create a new mechanism and thereby add to over-production in that instance. Mr. Bigelow has stated that 52 per cent of the consumer's dollar, in the case of furniture, floor coverings and the like, goes to cover the costs of selling the products. If Mr. Platte could tell us what the selling costs were before this plan was put into effect and how they have been changed, either as reflected in lower prices to consumers or in greater profits to the manufacturer, since its adoption, we might be able to draw some conclusions concerning its success.

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[8] President, Celluloid Corporation, New York, N. Y.

Mergers are in my opinion one way of effecting economies in distribution. The General Motors Corporation, which supplies a large part of the automobile market, has been able to work out a plan similar to the one described by Mr. Platte and has undoubtedly learned during this period of depression how it can be improved. In this industry seven companies are producing about 90 per cent of the pleasure cars made and in the tire industry five or six companies are producing 92 per cent of the tires made. When these few companies are able to operate at little more than half their capacity it is not hard to realize the tremendous expense involved in marketing the products of the many small concerns in the field and the tremendous possible savings in combinations.

Harry A. Wansker.[4] One of the questions confronting every producer of goods is that of granting concessions to large buyers. Most producers arrive at their prices by figuring production costs, adding an amount for profit and letting it go at that. And they shade these prices to get large orders. They should take into consideration their own, the wholesaler's and the retailer's marketing costs as definite parts of distribution expense. Not only the actual handling cost of getting goods from the manufacturer to the consumer but the time element involved should be considered. Goods in warehouses and idle equipment pile up rent and interest charges which have to be met. Economic profit requirements should at least equal the normal cost of the service rendered by a plant producing its share of the total product of which the industry is disposing.

The one way to effect economies which will make prices attractive to large buyers is to standardize products. All the elements of cost should be actually figured and prices maintained on the basis of these costs.

Unless you spend an amount at least equal to your profit requirements on sales effort you cannot hope to maintain dividends and build up reserves for future development. If you spend one-half of this amount you will find your net profits have later shrunk to one-half, and if you spend less than that you are apt to find you have no profits at all.

Henry P. Kendall.[5] I should like to ask Mr. Platte if he finds any embarrassing conflict between the men who are selling directly to the department stores and the distributors' salesmen? In other words, is there a tendency for the direct salesman to get all the business he can, and how does Sloane handle the problem that this creates in respect to the distributor in the territory?

I am also interested to know what broad results have been accomplished so far in this five-year plan to secure a $1,000,000 market.

B. Eugenia Lies.[6] I should like to ask whether Mr. Platte's ideal dollar inventory was built up from the ideal stock units as a base or whether sales volume figures were used. And is the figure modified from month to month or set up for six months or more in advance, i.e., is it or is it not flexible?

H. S. Person.[7] I should like to ask whether Mr. Platte or anyone of whom he knows has ever tried to work out a bonus to be paid to both direct salesmen and distributors, based on total sales in their territory?

Mr. Platte. In answer to Mr. Kendall's first question, I should say he was quite correct in assuming that it is embarrassing to have both distributors and direct salesmen working in a territory. We have not solved the problem but have worked out something in our sales policy this year which is a help. The tendency of our salesmen, whether they are on commission or salary, is always to go out and get the order. They hate to do any missionary work which will mean a sale for the distributor. Our sales policy this year states that a retail store that purchases from 50 to 199 rugs can buy directly from Sloane, providing it takes 100 per cent of the order in one shipment. If the order is from 200 to 399 rugs, 50 per cent of the shipment must be made at one time. This means that we practically cut ourselves off from servicing this group; the Sloane salesman who can sell that kind of an order belongs on a throne. We have written into our sales policy inhibitions which make it practically impossible for our salesmen to do much against the jobber. They have to go out and help the jobber salesmen. If we knew the volume of business being done by these jobbers in each county we could give a salesman a territory and make him responsible for what is sold in it, whether through jobbers or department stores. We do not have the figures, however. A Chicago jobber may go down to Indianapolis to sell, for example, and we do not know exactly how much is sold by the retail store to the ultimate consumer. The one thing we have accomplished is to make it practically impossible for the middle-sized retailer to buy directly from Sloane salesmen.

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[4] Marketing Consultant, Newton, Mass.

[5] President, The Kendall Company, Boston, Mass.

[6] Director of Planning, R. H. Macy & Co., Inc., New York, N. Y.

[7] Managing Director, Taylor Society Incorporated, New York, N. Y.

As to what this plan has accomplished—Mr. Kendall's second question—I can make a few definite statements. One of our aims was to get the distributors to establish a definite inventory-control system. Close to 50 per cent of them have done this. Some did it voluntarily and others had to be sold on the idea. Less than 50 per cent of them have set up sales records, another of our major aims. They are enthusiastic about the profits the plan has yielded them. I met with a group of distributors recently and got quite a different response from what I had received two years ago when the plan was presented. At least there has been progress in mental attitudes, and Sloane is well pleased with the results. Price schedules are being pretty well maintained and there are fewer large orders at low rates on which only small deliveries are ever made. I think this is about as definite a report as I can make on results.

In answer to Miss Lies' questions I would say that we use the ideal stock units combined with cost of goods in building up the dollar inventory. Selling price could be used or cost of goods plus mark-up, but we feel there is an advantage in using cost of goods in that it is easier to handle and less subject to fluctuations. The inventory-control system gives definite characteristics for every weave, size and pattern by seasons. This means that the inventory figure can be arrived at quite automatically, but that it changes from month to month in accordance with the changes in characteristics.

Dr. Person asks if we could not set up salesmen's and distributors' bonuses territorially. As I have said before, we are not able to define territories and therefore cannot work out such a bonus. We should like very much to have direct salesman's compensation based on all the sales in a territory. I cannot quite see paying the distributors a bonus for what the direct salesman sells.

Spring Meeting on Planning

Hotel Benjamin Franklin — Philadelphia, Pa.—April 30, May 1, 1931

Detailed programs will shortly be available, but in the meantime we announce that we hope to present the following prominent speakers on special phases of the general subject on Sales Planning—Stuart DuBois Cowan, Cowan & Dengler, Inc.; on Office Planning—Walter D. Fuller, Curtis Publishing Company; on The Relation of Cost Accounting to Budgeting—Floyd F. Hovey, Eastman Kodak Company; on Planning on the Scale of an Industry—Thomas L. Chadbourne, Attorney representing the American sugar interests at the Brussels conference; James A. Farrell, President United States Steel Corporation; Walker K. Hines, Director Cotton Textile Institute; on National and International Planning—Major L. F. Urwick, Director International Management Institute, Geneva, who is to be our guest at this meeting.

Industrial Employment Code[1]

Tentative Draft Presented for Discussion Only by the Industrial Code Committee of the Taylor Society[2]

THIS code has been drafted in its present tentative form by a committee appointed for that purpose by President Henry P. Kendall. It has not been adopted either in part or as a whole by the Taylor Society or by the Committee itself as a final document. No plans have been made for its adoption by the Society, but it is hoped that after ample time for discussion—perhaps one year—some code may be developed which will meet with the approval of the Society. Such a code as a formulation of experience, especially if kept up to date by a standing committee, would be very useful to industry in the United States, and possibly it would be of interest in other countries, especially those represented in the membership of the Society.

Some members of the Committee have suggested that a comprehensive Management Code should be developed with the Industrial Employment Code as a first section. No recommendation on this point is made by the Committee, but the suggestion may throw new light upon the discussion of the present draft and its potentialities.

The Committee desires the widest possible discussion and suggestions from whatever source they may come as to the form in which such a code may be of the greatest use and as to its content. We believe that there are great possibilities of usefulness for such a document if wisely drafted and therefore invite the co-operation of the Society and its friends to this end.

I. Purpose, Scope and Use

This code is offered for use by those persons who are responsible for working conditions and human relations in industry, *who wish their procedures and policies to be rated above the average in standards of employment in the United States.* It is not a counsel of perfection. Leaders who keep ahead of the procession in advancing standards for labor as industry increases its productive capacity will regard this code as a minimum. But perhaps half the industrial enterprises in the nation may find themselves below its requirements in some particulars.

All, however, are invited to check their conditions by it point by point; to report those points at which a higher standard has been proved practicable; and to experiment with those possibilities not yet attained by them.

If the word "code," through its association with legal procedure, implies some form of compulsion, or if through its usage in mechanical engineering it suggests greater precision than is yet possible for human relations, it should be pointed out that the compulsion and the precision of this code rest upon the accuracy with which it has formulated actual experience in industrial establishments. The group which has formulated it has sought to make it a record of good practice at present in what may be described as the upper half of American industry. As industry in the United

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[1] Presented before a meeting of the Taylor Society, New York, December 5, 1930. Discussion of the Code will be continued at a meeting to be held in Philadelphia, May 1, 1931.

[2] Industrial Code Committee of the Taylor Society: Arthur E. Barter, Works Manager, The Plimpton Press, Norwood, Mass.; Henry Bruère, President, Bowery Savings Bank; John M. Carmody, Editor, *Factory and Industrial Management,* President, Society of Industrial Engineers; Morris Llewellyn Cooke (Chairman), Consulting Engineer in Management, 1520 Locust Street, Philadelphia, Past President Taylor Society; Gustave Geiges, Personnel Manager, Gotham Silk Hosiery Co., Inc., Philadelphia, Past President, American Federation of Full Fashioned Hosiery Workers; Lillian M. Gilbreth, Consulting Industrial Engineer, Montclair, N. J.; Francis Goodell (Secretary), Industrial Engineer, Naumkeag Steam Cotton Co., Salem, Mass., Willard E. Hotchkiss, Dean, Graduate School of Business, Stanford University, California; Gorton James, Director of Marketing, The Thompson and Lichtner Company, Boston, Mass.; Florence Kelley, General Secretary, National Consumers League, New York; Morris E. Leeds, President, Leeds and Northrup Company, Philadelphia; L. C. Marshall, Professor in the Institute for the Study of Law, The Johns Hopkins University, Baltimore, formerly Dean, College of Commerce and Administration, University of Chicago; H. V. R. Scheel, Vice President, Botany Consolidated Mills, Inc., New York; F. A. Silcox, Industrial Relations Director, New York Employing Printers Association, Inc.; Francis Lee Stuart, Consulting Engineer, New York, formerly Chief Engineer, Baltimore & Ohio and Erie Railroads; Mary van Kleeck, Director, Department of Industrial Studies, Russell Sage Foundation, New York; Joseph H. Willits, Professor of Industry, Wharton School of Finance and Commerce, University of Pennsylvania, Philadelphia; Robert B. Wolf, President, Pulp Bleaching Corp., Consultant in Paper Machinery Industry, 200 Fifth Avenue, New York.

States is essentially dynamic and progressive, the good practice of today may be expected to become the average tomorrow and the minimum the day after. The proposal is made, therefore, that the code be rewritten as often as the experiments of leaders in the improvement of human relations and conditions demonstrate that better practices and higher standards are feasible.

Industry as used in this code may be defined as including *those branches of economic activity in which men and women are employed in numbers for wages in occupations involving the use of machines or auxiliary to them; or employing workers in subdivided tasks.*

Employment as used in this code includes *human relations and conditions in an enterprise or an industry.* This idea further subdivides into wages and earnings; hours of labor; security of employment; policies and procedures as to selection, training and promotion, including minimum age, provision for older workers, personnel organization, supervision and foremanship; safety and health in work, including physical conditions of workrooms, protection against accident and occupational hazards, medical supervision and attention; provision for representation of workers' interests and points of view, including possibility of a hearing in an individual grievance and the more positive opportunity to make suggestions for improvement in processes; and arrangements for the collective functioning of employes as a group.

As conceived by those who are formulating the code, the persons "responsible" for employment, for whose use it is designed, include in the first instance, the employer, who as financial owner of the business has the power to change conditions. Perhaps he has shared his power and his responsibility for human relations with some organization of employes within his workshop or in the industry as a whole; in that event, the code is addressed also to the employes as members of a group and to the leaders chosen by them. Sometimes the individual owner or manager has given place to stockholders, more or less numerous, who are the owners; and management, employed by the owners, constitutes a separate group of individuals who share the responsibility for conditions of employment. In those rare but significant instances in which plans are in effect for co-operation in management on the part of trade unions, the leaders and members of the unions share also the power to put this code into effect. In public utilities the public as a whole becomes responsible for fair wages and good working conditions and relationships. *The code is addressed, therefore, to all who have any degree of power to put its provisions into effect.*

II. Criterion of What is Satisfactory in Human Relations and Conditions

Human relations and conditions in industry may be regarded as satisfactory if they result in the effective co-operative functioning together of employer and employes in a socially desirable manner for the attainment of an agreed objective. Thus human relations and conditions are not separate from management, but an essential phase of it and dependent upon its competence.

III. Objectives of an Industrial Enterprise

If the criterion just stated be adopted, it is obvious that the accepted objective of the enterprise must be large enough to comprehend the interests and relations of all groups in industry, including the relations of employer to employe, the relations of colleagues within the management to each other, the relations with competitors, and finally the relations with customers. Such an objective may be defined as *supplying goods and services with the least possible waste of human effort and materials, at the lowest prices consistent with good quality of product, fair wages, healthful working conditions and safety and fair return for capital invested.* As productive capacity increases with the application of new technological discoveries and with the increasing competence of management and labor, all the factors in the equation of relationships must correspondingly change, including the specific content of "fair wages and good working conditions"; "safety and fair return for capital invested"; and the buying power of the consumer. The necessity for correspondence between productive capacity and consuming power gives added reason for "fair wages and good working conditions," which make possible a rising standard of living for all wage-earners and permit them to function correspondingly as consumers.

IV. Wages and Earnings

Not only the wage scale established but *the method of determining wage rates is a vital factor in employer-employe relations.* The principles of scientific management emphasize that setting the rates of compensation involves *study and standardization of all factors affecting the performance of a given task,* including the keeping of machinery in good condition, provision of proper tools and good materials and the maintenance of good working conditions, as well as careful selection and training of workers.

Time and motion and related studies should be regarded as part of this task of standardization and a tool for the discovery of facts about costs. *Time study should be a joint enterprise between the worker and the observer.* Before it is undertaken, its purpose should be frankly explained to the operative who is to be observed; and it should not be practiced except by those who have mastered its technique. Secrecy should never be permitted; *frankness is an indispensable condition for its full usefulness.*

Standards already established in an industry and in the locality should be reviewed at regular intervals, with the presumption that improvements in productive capacity should be reflected in increased earnings. Cutting rates should be avoided as demoralizing alike to production and to the community's standard of living. *All wage adjustments should be based on procedures which insure at least relative permanency.*

Profit sharing has not yet reached the stage in experiment where it can be put forward as an agreed record of experience and still more tentative is the whole subject of employes' stock ownership. At this time it can only be urged that profit sharing and employes' stock ownership be studied, but without recommendation in this code.

V. Hours of Labor

A working day of eight hours has been so generally accepted in industry, as meeting the social needs of the worker and as a safeguard of efficiency in production, that the burden of proof rests heavily on any longer schedule. This applies, of course, to continuous twenty-four-hour work, which should be divided into at least three shifts. A shorter working day is under discussion in some industries and is worthy of study in all work places where increasing speed of production, due to improvements in equipment, has resulted in a marked increase in output. Experience itself is the only final arbiter as to what the hours of labor should be. But *the needs of the workers for leisure and for protection against excessive fatigue set maximum limits within which management must be competent to devise methods of production to fulfill these social needs.* Overtime representing excess over the regular schedule should be paid for at a higher rate of at least "time and a half," both as a deterrent for management to keep within the standard schedule and as a recognition of the right of the workers to their leisure.

The working week should always insure one day of rest in seven. The Saturday half-holiday is now well established, especially to insure the average if the preceding five days are longer than eight hours each. The five-day week has reached the stage of experiment and should be watched by all progressive managers. It is to be expected that *the world's increased productive capacity should result in increasing leisure for the workers, and it is to the advantage of a proper balance between production and consumption that industry should not be too slow to reduce daily and weekly hours as higher levels of output are permanently attained.*

That the legal and customary holidays of the community should be observed needs no emphasis, as this is commonly accepted in well-managed enterprises. Equally desirable is the growing practice of giving summer vacations with pay.

Night work should be avoided where possible and should never be required of women employes. As brought out in briefs in defense of labor laws prohibiting night work for women, presented in the Supreme Court of the United States and in the state courts, it is the world's experience that, in the interest of the health and social well-being of the woman worker and of the community, she should not be required to work at night in industry. Investigations have shown that the majority of women who work at night in factories do so under a heavy burden of caring for their homes by day and working in factories at night, and it is to their interest and that of the community that they should be protected against this double burden. The other specifications for hours of work by day and by the week apply with equal force to men and women.

Minors under the age of eighteen years should never be employed longer than eight hours a day.

VI. Security of Employment

To insure relative permanency and continuity of employment should be an objective of good management.

In so far as frequent changes in the working force arise out of lack of adjustment of individuals to their work, the causes should be dealt with as problems in personnel organization, discussed in a later section. Involuntary unemployment which results from the failure of the individual firm to hold its own, or from seasonal conditions in the industry as a whole, or from general business depression, is a problem involving many elements of management beyond the scope of discussion in this code. However, security of employment as one of management's major objectives; *a definite guarantee of employment for a specified number of months in the year and provision of funds to make payments to workers for whom employment is not provided for the guaranteed period, is being demonstrated as a practice which should be studied by all industries in the interest of the workers, the community and the enterprise itself.* Continuity of employment is coming to be looked upon as a net result of all the elements which enter into good management, and if so regarded it constitutes a stimulus to the better performance of all the functions of management.

Technological improvement—the invention and adoption of energy-saving equipment and the discovery and adoption of improved methods of work—*should be a matter of continuous concern and of specialized responsibility within the organization.* These should be a matter of concern because they constitute the solid foundations of stability within the industry, and that concern should be *continuous* because improvement by small increments permits adjustments to change on the part of the individuals concerned and avoidance or reduction to a minimum of what has come to be called technological unemployment. Especially adjustment to change on the part of the older, less flexible workers is promoted if change is by a succession of moderate adaptations instead of periodic radical technological upheavals, and thus the imponderable assets embodied in the experience of the older workers are preserved for the organization, a subject to which reference will be made in a later section.

Sudden termination of employment, without warning and without financial compensation, is contrary to good practice in employment.

Procedure for making changes among employes should be formulated as part of managerial policy and should have regard for the general objective of security. The whole operation should be studied and a forecast made of the effect of changes upon personnel, including the possibility of retraining the present personnel for the new processes or the transfer of these individuals to other processes. Rates and the reassignment of employes to be affected should be studied with a view to maintaining the level of earnings of those affected or raising it if the new process results in such a lowering of cost as to make possible changes in prices and wages.

If displacement of employes is unavoidable after all the other possibilities have been studied, *a compensation wage should be paid as a lump sum or in weekly payments, covering a reasonable maximum period to make it possible for the worker to find another position; the personnel department should assume definite responsibility in co-operation with public employment offices and other agencies to assist the worker in finding other employment.*

VII. Personnel Organization

To secure, develop and maintain a competent working force is the basis of lasting success in an industrial enterprise. Provision for attaining this objective through competence in the personnel function is of the essence of an employment code. The personnel function may be organized in a variety of ways, according to the needs of the particular enterprise. It should, however, be so developed as to insure maximum success in selection of the right employe for the right job; the training of the employe for the best performance of his job; and his promotion to more difficult work for which he has capacity and ambition. As women workers constitute a substantial and permanent part of the working force in American industry, it is obvious that success in attaining this objective demands that the opportunity for selection, training and promotion be extended to women and men alike, giving to women as to men a chance to develop and use their best capacities in work.

Principles and procedures for good personnel work, judged by this general objective, will affect the choice of foremen, their training for their work, and in general the mechanism for proper supervision of work. *Foremanship should be regarded not merely as an obligation to keep machinery in order and to secure a maximum output, but as a responsibility for leadership of groups of men and women who are freely cooperating in the task of production.*

VIII. Safety and Health in Workrooms

Engineers and architects are rapidly developing standards for the physical conditions of workrooms, which should make unnecessary a detailed statement on this point, except to indicate certain basic points demanding constant attention by management.

The best-managed enterprise will be the safest, because it will provide for machinery suited to use by human beings without risk; clean floors and removal of waste and debris which cause accidents; proper hours of work to avoid fatigue; and a wage policy which eliminates unreasonable pressure for speed resulting in carelessness as to the use of safeguards. Moreover, *in a well-managed plant, supervision insures full knowledge of the circumstances of an accident as a basis for prevention of a similar occurrence in the future.*

The uses of new and hitherto untried chemicals in manufacturing processes make necessary constant expert advice regarding their effects on the human body. In industries in which such hazardous chemicals or other materials are used, *the personnel function must include proper medical supervision to prevent injury or to counteract it.* They require also the elimination of youth under twenty-one years of age, as more susceptible than adults to injury from poisons and less trustworthy in carrying out self-protective measures.

In the larger industrial states, the state labor departments may be called upon for expert advice, and in a number of them special codes for physical conditions in workrooms and special arrangements for particular industries have been adopted by industrial commissions and have the force of law. These legal arrangements, of course, are accepted as a minimum in all industries.

IX. Policies Regarding Age

Progressive personnel policies establish at least sixteen years as the minimum age for employment, although employment at fourteen years of age is permitted by the laws of the majority of states. Seven have adopted the fifteenth or sixteenth birthday for manufacture, and management in many enterprises has raised the standard beyond the legal requirement. Experience shows that minors of sixteen are more capable of developing into competent workers than younger children and that, on the other hand, the employment of children has serious social consequences in denying them a full measure of elementary education and injuring them in mind and body. A positive, constructive policy will include co-operation with the public schools in vocational guidance and in possible vocational training, and this co-operation with the schools becomes more feasible when the age limit is set at sixteen.

At the other end of the scale of ages, the policy of discharge because of age has serious social and industrial consequences. *A thoroughly well-considered personnel policy which has included the training, development and promotion of workers will result in continuing the older workers as valuable assets in an industry; and in recognizing the obligation of an industry to prevent the social waste of unemployment of men and women who are still far from old age.* If in change of processes the older employe is incapable of measuring up to the requirements of a new method, the policy already outlined for insuring security of employment or compensating when displacement is necessary should be applied here with greater care, since the older worker encounters greater difficulties in finding other employment. *An enterprise should also avoid setting an upper age limit for hiring workers, since this has social consequences for industry as a whole, of much the same character as the separate enterprise encounters in the obligation of retaining older workers.*

X. Employes' Group Relationships

Aside from the technical developments which constantly cause change, there is the ever-present fact that human relations must be renewed day by day. These day-to-day applications of principles and their changes to meet changing conditions suggest *the desirability of definite group organizations of the workers, with clear responsibility for functioning as a group in attaining the accepted objectives of the business.* The purpose is to create such conditions of confidence as will result in the least waste of human effort in avoidable friction, and the maximum contribution of the individual through his work to the economic service rendered by the business employing him. *Unprejudiced study of the most effective forms of organization of labor for functioning in relation to management as a science is an obligation resting upon progressive managers, in the interest of good management as well as in recognition of the importance of satisfactory human relations in industry.*

Theoretically it seems logical that any employer should have the right to negotiate and deal with any employe individually. But when it is considered how disproportionate is the power of a modern large-scale employer to the power of any individual worker, it becomes apparent that labor is no more than reasonable when it insists that all the workers in a particular plant or project, or all the workers in a paricular trade or craft, shall be considered as a unit for purposes of negotiating and bargaining with employers. *Labor's right of collective bargaining is now, in this country,* *so widely recognized as to be generally beyond debate in theory and beyond contest in practice.* That right may be exercised through various forms of organizations. "Company unions," however, can perform the function of collectively representing the employes only if control of this organization of workers rests fully and really with the workers themselves. With whatever form of workers' organization an employer must deal, fairness, good faith and complete frankness about all governing facts are the surest means to understanding and agreement.

Any condition of the work contract binding the workman not to join an independent labor union is inadvisable. Such a promise is necessarily coerced and its exaction is born of lack of confidence. It therefore destroys at the outset the willingness and loyalty out of which the co-operative spirit must grow and engenders instead either apathy and servility or a covert hostility. It promotes secret association apt to flame into violence. Furthermore, the trend of the courts is to the opinion that such a promise is against public policy and hence unenforcible.

XI. Employment Records

The personnel function can be properly discharged only if adequate records are kept, upon which decisions regarding individuals, their development and promotion can be based. Co-operation with governmental departments in providing data on employment and earnings for current use as a guide in business policies is a contribution of the individual establishment to general industrial stability.

Discussion

Morris L. Cooke, Chairman.[3] As Chairman of the Industrial Code Committee I want to impress upon you the tentative character of this code. We have no plans as to when, if ever, it is to be adopted; we are simply feeling our way. If in the course of a year or two we have evolved something that would seem to be an aid to American industry then we may ask you for some sort of an endorsement. We want you now to feel free to discuss it knowing that it is in no way a finished product.

The use of the word "code" in this connection has been questioned. In planning for this committee we compared its possible function, for example, with that of the A.S.M.E. committee which developed the boiler code. There are hundreds of such objective codes now in use in the country. The Industrial Code cannot yet be as objective in its field as those that operate in a field where measurements with the foot rule and weighing scales are possible. Perhaps some day we may get there. But in the meantime the word "code" gives you a broad and informing idea of its proposed function.

It has been our theory in taking up one matter and another connected with this code that as representatives of the Taylor Society we could afford to discuss anything. It has too frequently been the policy of committees and associations such as ours simply to omit any points which might prove troublesome or embarrassing. So far as I can recall there have been no such failures to meet the practical and essential things that came up in our field. We have simply acted in accordance with the Taylor Society tradition of providing a thoroughly open forum for all points of view.

As to the history of this idea, the Ordnance Department in 1917 put out its General Order Number 13, "Suggestions for Arsenal Commanders and Manufacturers," which covered somewhat the same field as the code we now have before us. I am proud to say that it carried the signature of our honorary member, Major-General William Crozier, then Chief of Ordnance. It was later issued by the Quartermaster General of the Army, so that it can be said that billions of dollars of work were done under its provisions. Some of the members of the Taylor Society worked with General Crozier and General Sharp in formulating this document.

At a Taylor Society meeting held less than three years ago remarks were made from the floor which indicated that practices considered highly desirable by Taylor Society members were still debatable in some areas. And other practices which we would have supposed to be generally abandoned were apparently still in high repute. The need for such a formulation of ideas as is here presented was there apparent.

It might also interest you to know that it was brought out in a discussion at Boxly during the recent visit to this country of sixteen Japanese industrialists that six months' compensation was the normal separation or dismissal wage in Japan. In other words Japan, the country once classed as backward by the International Labor Office, considers it normal to give a worker a feeling that his job is secure for at least six months ahead while we in this country have no general rule, except perhaps that of giving domestic servants a week's notice.

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[3] Consulting Engineer in Management, Philadelphia, Pa.

You will notice that certain parts of this code have been set in italics. This is the fifth draft that has come before the Committee. The first few were considerably longer; later ones will undoubtedly be shorter. The Committee felt, however, that in the present stage some effort should be made to weight certain parts of the code. And so the effort has been made to give emphasis to the subjects of greatest importance by means of italics.

In justice to my associates on this committee, I think I should say that this code has not attempted to say the last meticulous word on any particular subject. From the point of view of experts especially in highly technical subjects it may be open to criticism. I have in mind particularly certain of the health references. If this part of the code meets with the general approval of this group we shall then pass it on, for further work, to people who have specialized in this field, and so with other sections.

You have only to read the names of the eighteen members of the committee that has been working on this code to know that if each one of these people had been assigned the task of drafting this document we should probably have had eighteen quite different results. And yet nothing in this document has met with any serious objection on the part of any of the eighteen. I am grateful to my associates for the time and effort they have expended on this project and happy to say that they voted unanimously to present the code to you in its present form, of course, with the understanding that it is all quite tentative.

L. K. Comstock.[4] I think this is the best statement I have seen to date on the general subject of human relations in industry. Criticisms of this document may occur to me, and to others, as time goes on but the document gives such evidence of intensive study on the part of competent people that they do not occur now to me.

In Section II, I believe you have the meat of the entire code. If you can get the kind of co-operation here described all the rest of the things in the code will follow as a matter of course. Without that co-operation nothing is possible. The other points in the code can be regarded as road signs pointing the way to that co-operation described in Section II and should be as briefly and concisely phrased as possible.

I can speak on this matter of co-operation out of my own practical experience in forming the Council on Industrial Relations for the Electrical Construction Industry. Our first meeting took place some ten years ago with five employers and five labor men present. Following the usual custom, the labor men all lined themselves up on one side of the room and one, as spokesman, demanded what the employer group "had up its sleeve." The self-appointed chairman of the meeting first suggested that the seats be changed so that each employer should sit next to a labor man. This was done and the atmosphere immediately changed. The chairman then simply stated that no definite goal was sought but merely a common ground to stand on. We sat for the entire day discussing what we at that time called a declaration of principles and as a result eight principles were evolved which form the fundamental law of the Council on Industrial Relations today. We might have called it a code.

The chief objective was to build a strikeless industry the world around and we have accomplished that objective. Four years after the Council started to operate, the international union converted a strike fund of more than a half million dollars into the nucleus of the capital necessary to set up life insurance for the union. Since 1925 there has not been a cent in the treasury of the international organization for strike purposes and there have been no strikes.

The insurance company, which was set up and is operating under the insurance laws of the District of Columbia, has been very successful.

All wage adjustment provisions should have the element of at least relative permanency. Through the work of the Council on Industrial Relations for the Electrical Construction Industry almost all sections of the international union now use an agreement, or agreements, with employers that never comes to an end. It is a continuing agreement which provides for making changes in due order and in due time.

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[4] Chairman, Council on Industrial Relations for the Electrical Construction Industry, New York, N. Y.

The subject of hours of labor will probably be debated for the next hundred years. I believe there must be a point between fatigue, on the one hand, and staleness of the worker, on the other hand, which should determine the length of working time. Theoretically if we could find a way of measuring production records accurately we could regulate hours to meet production needs. Conceivably a one-hour or a four-hour day might suffice. That is not in hailing distance but in theory we could at least approximate it. On the other hand there is the danger of workers becoming stale and losing skill if they work too little. Some point between fatigue and staleness should regulate hours.

I want to repeat what I said in the beginning that I think this the best statement I have seen on this subject and that I think the second section the most important. Without it nothing is possible; with it everything is possible.

John P. O'Connell.[5] This document seems to me a very good start toward a general human-relations code for industry.

Industry has always been handicapped, I believe, by a tendency to stifle expression on the part of those engaged in it. There is a separatist movement in industry with a feeling on the part of the operatives that their opinions are not of any value. This develops reserve and resentment in them. Many of the claims of industry that operatives are not doing their full share are due to the fact that industry withholds from them the right to express their ideas and to participate fully in discussion. I have always felt that those who work in industry have the knowledge and that an expression of their ideas should be wanted. If it is wanted the workers will become a force within industry which will bring additional success to every venture. Organizations of workers have been for the purpose of gaining this freedom of expression. If this code can further such expression either through organizations or otherwise it will have gone a long way. If the atmosphere for such freedom can be created the workers will find the proper forum—whether labor union, or still a different form of organization.

That is the point we have worked on in the Pequot Mills. We have tried to give the workers the feeling that it is their industry and that their ideas are wanted. They feel they have a part in it and are able to meet the problems that come up, or to find a common ground for their solution.

We all realize that continuity of employment is a pretty big promise for an employer to make but every effort should be made toward it. Management frequently realizes the importance of this as an objective but does not believe that it is within its power to gain that objective. When managers have the benefit of free expression on the part of the workers it will at least become an essential part of their program.

In all our conferences at Pequot Mills, we have been engaged in providing ways to secure continuity of employment. As soon as a worker has that he is able to budget himself yearly instead of weekly. His mind is at rest and he can be concerned with the problems of industry instead of his own home problems. As long as he feels he is going to be continuously employed he can find time to think and to investigate conditions in his own shop. If a worker does not know whether he will be employed the next month or the next week he does not have much interest in the industry in which he is employed. The group discussions between management and workers at Pequot Mills have done much for the success of this plant and therefore for continuous employment. Shut-downs and lay-offs, even in times of depression, have not figured very largely in the picture.

The strengthening of these two points in the code are my only suggestions for change.

I have been a little bit puzzled to know how such a code could be promulgated in industry. The first step has been taken in formulating the code. The next is to have it accepted. If this could be accomplished a great many of the worries of management would be eliminated.

Within our own industry the adoption of such a code would soon help to put labor costs on a comparable basis. In spite of higher wages at Pequot Mills, other plants are unable to compete with us because of our greater production. The relationship between management and workers has not only brought about higher wages and shorter hours but greatly increased productivity, with the result that other concerns engaged in the same line are unable to compete with us. And our greater productivity has been due to just two things: the fact that we have worked for continuity of employment and fullness of expression on the part of the workers. Aside from the definite provision for conferences there is no day or hour when any matter cannot be taken up with a foreman, supervisor or with the office. And there is no loss of time in getting together.

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[5] Secretary and Business Agent, Sheeting Workers Local Union No. 33, United Textile Workers of America, Salem, Mass.

I believe our time-study procedure should be of interest to this group. Until recently I had never had anything to do with time study. In the labor movement I had heard it damned but I had had no experience with it. One of the first things we did with the Research Committee at Pequot Mills was to spend six months in training workers' representatives in the art of time study. It improved the morale of the workers considerably to know that their representatives were going to have something to do with this study. Before time-study work was started a representative of the management and a representative of the workers went to each worker and explained what was to be done. They saw that the two (union and management) were working together and they did all they could in cooperating to see that a good job was done.

In the twelve years we have been working in this way at Pequot Mills, there has ceased to be any feeling that a contest exists between two parties, other than in the development of ideas.

Eugene B. Patton.[*] One of the early drafts of this document fell into my hands with the request that I put down my reactions to it. I did this and felt quite pleased to find that practically all the things I had criticized in the first draft had been adjusted in this one. My vanity suffered a bit, however, when the chairman told me he had not been informed of my having read the first draft!

In view of the eighteen people who have unanimously agreed to this statement it would seem like an act of temerity to criticize it now. In fact I feel as though one doing statistical work were out of place in this group. I am reminded of the country preacher who was speaking from a platform erected on a mountainside in Tennessee. When he wanted to put across a telling point he leapt straight up in the air and came down with such force that the platform gave way and he rolled down the mountainside. As soon as he could get back, he asked "Where was I?" And one of the sisters replied, "You were in Second Timothy." He said, "I knew I was in the tall grass somewhere!" And that is pretty much the way I feel.

I do know that there was one thing in the first draft of this document which has been omitted in the present one and for the omission of which I am sorry. I believe the first draft specifically protested against private fee-charging employment agencies. I wish that that condemnation might have been retained.

Of course I agree with the eighteen prominent and expert individuals in expressing general approbation of this document. And I think it is much better to have such standards precede an act in law. It is desirable that leading firms establish and maintain high standards of their own accord. Their experimentations may later take general legalized form with much greater effectiveness. We all live under legislatures and have confidence in their general intent and purpose but we have to develop confidence in their wisdom on specific subjects.

Under the heading "Objectives of an Industrial Enterprise" I have made a note to the effect that the economic objectives are here recognized. To my mind these support the humanitarian objectives. Immediately upon reading that paragraph the history of workmen's compensation came to my mind. A great many firms had effective workmen's compensation for accidents before there were any statutes anywhere. The general movement seemed to come along, as so many movements have, on a wave of humanitarian impulse. As a matter of fact, it was really put over when employers generally recognized that there was a genuine economic basis for workmen's compensation. I am glad to note, therefore, that you very commendably recognize that fair wages, adequate consumer buying power, etc., are economically essential to the proper functioning of industry.

I was much pleased to hear Mr. O'Connell's description of their time-study procedure and the attitude of workers toward it. I had thought that would be the most controversial provision in the document. In general labor, whether organized or unorganized, has seemed to be much opposed to it. I think that probably the only way to allay the suspicion of workers toward time study will be to have them go through such an experience as Mr. O'Connell has related. In Section VI there is a statement to the effect that standards should be reviewed periodically "with the presumption that improvements in productive capacity should be reflected in increased earnings." If that presumption could be acted upon, and if workers could be made to believe that it would be acted upon, I think a great deal would be accomplished toward removing the fear with which time study is regarded.

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[*] Director, Bureau of Statistics and Information, New York State Department of Labor, New York, N. Y.

I was a bit amused, if that is the proper word to use, to see the position that is taken in the code on night work for women. Whenever I hear such a statement, with which I am in complete agreement, my mind goes back to those embattled hearings in Albany. Evidently there was no "Equal Rights" representative on the committee.

Under "Security of Employment" it seems to me there is some slight contradiction between the first and last half of the paragraph. The first half states that "involuntary unemployment . . . is . . . beyond the scope of discussion in this code." The following italicized statement sets up security of employment as one of management's major objectives. I take it that the reconciliation is this: security of employment is recognized as a major goal toward which management should strive but the difficulties in the way are admitted to be so serious that management alone may not be able to overcome them.

I think the suggestion under "technological improvement" a very helpful one. The term technological unemployment may be comprehensible to you people, but to many outsiders, even industrialists, it is, I fear, a mere mouth-filling phrase.

If this document as a whole were to be put into effect in industry in the next ten years I think it would be a pleasant surprise to the great majority of people in the United States. My impression is that most people believe that no organization of employers would be anything like so liberal and far sighted. For that reason I hope you will speed up its adoption—not put it out fifty, twenty-five, or even ten years hence, but at a very early date.

There is one topic that has not been mentioned this afternoon. Under "Personnel Organization" the last paragraph refers to foremanship. It is my belief that the ideal foreman is so rare as to be practically non-existent. And yet the selection and training of good foremen is the most important factor in plant operation. I am glad you put this statement in italics. No matter how good the plans of management may be, if there is no foreman capable of interpreting them they will not get across to the workers.

I am very glad that chemical hazards are mentioned especially under "Safety and Health in Work Rooms." It is an exaggeration, I suppose, to say that the chemical revolution today is comparable to the industrial revolution of the third quarter of the nineteenth century. It is certainly amazing in scope, however, and puts upon all of us—especially employers—an added responsibility to see that workers are protected against this new type of hazard.

There is something of this random character that I could say about every paragraph in the code, but I will close with one more comment. The last sentence of the document says that "Co-operation with government departments in providing data on employment and earnings for current use as a guide in business policies is a contribution of the industrial establishment to general industrial stability." I am very glad to have this statement in the Code. For several years a number of States and the Bureau of Labor Statistics of the United States have been collecting monthly reports on factory employment and payrolls. These reports have served a highly useful purpose in estimating the volume of employment throughout that period. I should like to see still further co-operation on the part of industrial establishments and the furnishing of additional information, especially on employe-hours of work. The New York State Department of Labor, which has been issuing reports on employment and payrolls in *factories* for sixteen years, plans to issue a similar series of figures this winter based on reports from construction firms in the State.

H. V. R. Scheel.[7] Speaking from the standpoint of manager, I believe the very formulation and appearance of such a document as this can be said to have great and constructive value; a value which will be enhanced upon its adoption in code form. The fact that today the Taylor Society is giving consideration to ideas of this character marks the beginning of its influence.

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[7] Vice-President, Botany Consolidated Mills, Inc., New York, N. Y.

In considering what might be said on this subject, I have tried to envision the responsibilities of management. May I try to make clear what I think the relations of the investor, the worker and the consumer are to each other? It can be said that in a narrow sense the interests of each are inimical to those of the other two. The Simon-pure, selfish, unsocial investor would not care what labor is being paid or what the consumer is being charged. Similarly the worker is not primarily interested in whether there are dividends or not, or in whether the prices to the consumer are too high. And as to the consumer! He can be said to be without much conscience as to whether there is a fair return to either labor or investor. Does today's consumer seem to care whether the raw material was stolen, or whether the labor for converting the raw material into the finished product is that of a Chinaman living in China on a handful of rice a day?

Diagrammatically this opposition of interests of investor (capital), worker (labor) and consumer (public) is shown by triametrical lines at 120° to each other. Management operates to co-ordinate the efforts, abilities and the contributions brought to the joint adventure by each. When management is successful in effecting substantially just participation in the resulting gains to I, W and C, then the lines OI, OW and OC will be equal in length. The area of the triangle is in some proportion to the net gain of the endeavor to society as a whole. Can we by calculation obtain an index figure which represents the relative effectiveness from the social viewpoint of management for the same concern or industry in different periods of time? I think we can, for if we find that in a second period the advantage to investor is doubled, the line OI becomes OI_1; if the advantage to workers is quartered, then OW becomes OW_1 and if the advantage to consumer is tripled, OC becomes OC_1. The enclosing triangle becomes I_1, W_1, C_1 and the inscribed circle has its center at O_1. The distance OO_1 is designated by d.[8] The calculation then shows the relative effectiveness of management from the social viewpoint to be:

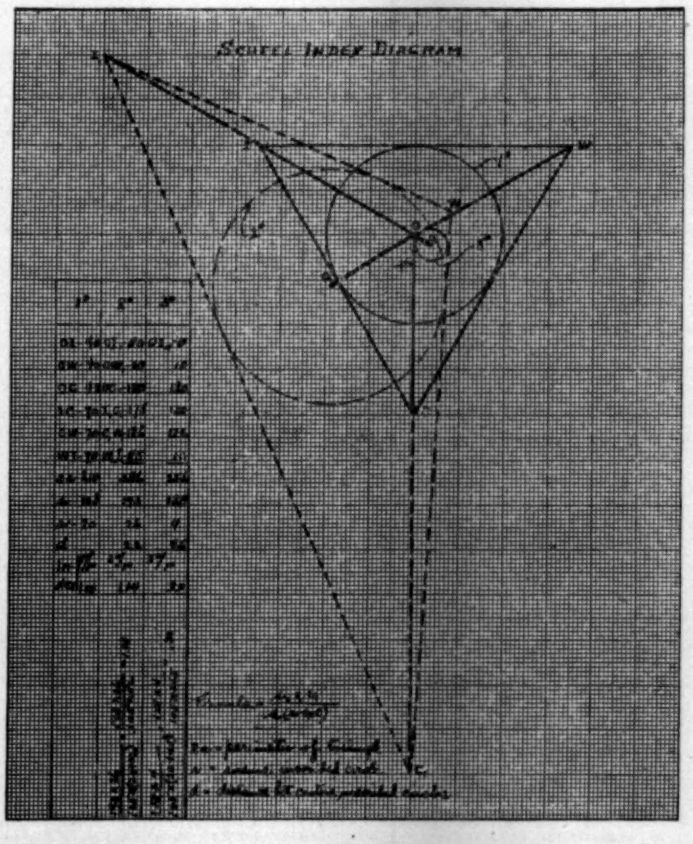

Figure 1

$$\frac{\frac{1}{2}\,(I_1W_1 + W_1C_1 + C_1I_1) \times Or_1}{\frac{1}{2}\,(IW + WC + CI) \times (r + OO_1)} =$$

$$\frac{\frac{1}{2} \text{ total perimeter of new triangle x radius of its inscribed circle}}{\frac{1}{2} \text{ total perimeter of old triangle x (sum of radius of old inscribed circle plus the distance between the centers of the inscribed circles)}} =$$

Index of relative effectiveness of management from

=

1.14 = 114 per cent

This perhaps indicates the accomplishment of Ford.

Now should the advantage to investor be reduced to zero, due perhaps to error in the buying of raw materials, or the creeping in of wastes, all without changes of advantage to workers or consumer as such, then our triangle becomes O, W_1, C_1 and its index figure works out to be 20 per cent.

Indeed the triangle may come to have negative value, for instance if investor suffered a loss, or if worker received short-time pay, or an amount of pay lower than his cost of living. When such negative extensions of a line bring a point, say I, to a point beyond the line connection W and C the value of the triangle is negative. This means that, speaking socially, the enterprise in which the three parties are co-operating is a net social loss.

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[8] Let r_1 be the radius of the new inscribed circle.

All important is the balancing of the advantages to the three elements. Today due to absence of centralized superplanning, or its voluntary equivalent, and due to the unrecognized overemphasis upon competition as such, the triangle for many a concern, and for many industries, is negative and as such indicates social loss.

All through this document there run references to the investor, the worker and the consumer. I submit that it is the problem of management to reconcile the interests of these three. Speaking socially, management is responsible for the distribution of the benefits of the venture in which investor, worker and consumer have joined for profit. Conclusions expressed in the form of a document such as we have before us will enable management better to do this job.

The proposed code is a well-made and comprehensive statement of what thousands desire as a guide and inspiration. It is opinion lifted above the level of that of the individual, not only by the designation "code" but by the fact that the Taylor Society will consent to its formal future adoption only after full discussion.

Rose Schneiderman.[9] We labor folks have looked upon scientific management with a great deal of misgiving. Our experiences have led us to look upon the manager as the representative of the employer. He is responsible to the employer and therefore the more profits he can make, the better off he is going to be. And profits are not always made without suffering on the part of those who do the work. It is a pleasant experience, therefore, to read this code and to realize that management is going in the direction which will make for a happier civilization.

I am a bit amused at the way in which the framers of this code tell us that Labor's right to bargain collectively has been generally accepted in this country. Right now I know of four thousand men and women in Danville, Virginia, who are fighting merely for the right to organize. I wish Mr. Fitzgerald and the Board of Directors of the Dan River Cotton Mills could listen in on this discussion of the code. It might do them a great deal of good and help to end a very serious situation.

I disagree with Brother O'Connell in the statement that workers' freedom of expression, with or without trade union organization, is the vehicle by which industry can operate more successfully. Personally, I feel that industry never will be stabilized until the workers are organized into trade unions, not only locally but nationally, and can bargain collectively with their employers, who are also organized. The advantage which comes from this type of employer-employe relationship is the only one which can be effective under our modern form of industrialism. Having been a trade-unionist for twenty-five years, I cannot see the company union. In my opinion it is a deterrent to progress and the sooner we recognize this and accept a relationship such as Mr. Comstock outlined, the better off we shall be. This sort of relationship also exists in the men's clothing and other industries, and can exist in every industry if employers will give up their stubborn attitude that it is an invasion of their rights for workers to have that power behind their opinions which organization gives.

I am very happy to see that the yellow-dog contract is condemned. And I am glad of the pronouncement on night work for women.

May I conclude by saying that I hope this code may be the beginning of what Professor Slichter outlined in his discussion of Mr. Douglas' paper. We cannot go on producing this, that and the other thing without knowing what the community needs. We must work out some system which provides for centralized research and planning. The Taylor Society is doing an admirable job in steering employers in this direction.

Jane Norman Smith.[10] As a representative of the National Woman's Party I am appearing here today to protest against that part of your proposed code which would deny to adult women the right to work on night shifts.

In reading the proposed code one finds that so far as the ordinary hazards of industry are concerned, protection is planned for all workers and not for women alone. This is at it should be. The night-work proposal applies to women alone. To this we object.

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[9] President, Women's Trade Union League of New York and National Women's Trade Union League of America, New York, N. Y.

[10] Member National Council, National Woman's Party, New York, N. Y.

It may be that night work is not good for any worker. Certainly, every argument used against it for women, so far as health is concerned, would apply equally to men. We contend that when night work is in operation, an adult woman should have the same right as a man to engage in it if she chooses. It is for her, not for others, to decide whether or not her earnings in such work compensate for the disturbance of normal routine. It is for her, not for others, to decide whether or not her private arrangements are better served by night work than day work.

When the New York law barring women from work on night shifts in various occupations was passed, thousands of women were thrown out of work in drug and candy stores, restaurants, printing shops, newspaper offices, in railroad employment, at news-stands and as elevator operators (except in hotels). The women concerned did not ask for this restrictive law. It was passed without their consent and against their wishes. It took some of these groups years to secure exemption and the restaurant women are still going to Albany each year to demand the right to choose their own hours of work.

When the representative of the State Department of Labor referred to the hearings at Albany, where "Equal Rights" women appeared against special labor laws for women, he forgot to mention that the women who battled there with the National Woman's Party against special restrictive laws for women were the wage-earning women who have been affected by such laws and others who would have been affected by proposals for further restrictions. These women were not "theorists."

This question of special labor laws for women is not being agitated in this country alone. All over the world women are aroused and are protesting against them. In Berlin, Germany, last summer women representatives from many countries met in conference and formed the "Open Door International," with the object of securing equal economic opportunities with men. This international organization, together with other women's groups, has recently sent a deputation to the head of the International Labor Office, to ask for a revision of the night-work convention, in order to end the discrimination against women.

The claim has been made that women should not be allowed to work at night because they have a double job—housework and their outside jobs. It is foolish to try to regulate the hours of all women wage-earners on the basis of those who have a double job.

We contend that if restrictions are considered necessary for the benefit of the individual and of the race, they should apply to all workers and not to women alone. If that is done, the individual will benefit, the race will benefit and women will be placed upon an equal footing with men in earning their livelihood.

Industrial regulations that apply to women alone are among the gravest discriminations against women. They close many doors of opportunity to women seeking employment. Special restrictive legislation, with its linking of women with children instead of with adults, began years ago in the transition stage of women's much protested invasion of industry. Today, when women are an established and increasingly important part of our economic life, justice requires that regulations and legislation concerning them be on the same basis as that for their male competitors.

Rose Schneiderman. I think if Mrs. Smith will compare the conditions and wages of women workers in the states where hours are regulated by law with those of the women workers in states which have no regulation of hours, she will find that wage-earning women are in every way better off in the states which have protective legislation. We do not object to the legal regulation of hours for both sexes, but we do not propose to wait until the men demand such protection. If the Woman's Party is interested in protecting men, why do they not start a campaign for the eight-hour day, without night work, for men? We women workers have not the time to do this—we spend our time trying to improve the conditions of working women, because that is our immediate job.

Major-General William Crozier.[11] Reference has been made to General Order Number 13 of the Ordnance Department as a progenitor of this code. As you know the Ordnance Department was using a number of dollar-a-year men during the War. A good many of them were Taylor Society members who are figuring pretty prominently here today. I wanted you to know that they had their hands in that early document as well as in this.

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[11] United States Army, Retired.

Arthur E. Suffern.[12] This code seems to me extremely realistic in actually facing the present industrial situation. The employer has protected property rights which give him ultimate control of industry. He can do business with that property or not as he pleases and in the last analysis he has the control no matter whether the arrangement with his employes is collective bargaining with a trade union or with a company union. He can discharge any employe at will and a representative of the employes cannot have a real status as a negotiator unless he is hired and paid by the employes. The code is realistic in declaring that "the function of collectively representing the employes" can be performed "only if control of this organization of workers rests fully and really with the workers themselves."

John M. Carmody.[13] I am sorry that Noel Sargent of the National Association of Manufacturers was not asked to comment on this document. I am glad, however, that the committee went ahead with something on which there is substantial agreement by a group of socially-minded people continuously working in industry. In order to progress it is necessary to nail down certain principles from time to time, even though there is no universal agreement on them. While I have made little contribution as a member of this committee I have been dealing with these problems over a number of years. Progress can only be made in industry on the basis of joint responsibilities and joint action on the part of all the essential factors in industry.

As a one-time production manager, too, I was always happier when I dealt with an organized group of workers. Groups, once agreed upon a policy, can be more effective in carrying out that policy than scattered individuals.

This is the first compilation of these principles that has been made. Improvements will be made and I look forward to the time when we shall feel that certain improvements and additions should have been part of the code.

Daniel M. Bates.[14] As one who has a large interest in a small plant I want to say that it has been my desire for years to get better co-operation between the working force and the stockholders. We have gone as far as to have all the chief executives become stockholders. We set aside a certain amount of stock for them, holding it as security until they shall have paid for it out of dividends. That is the way in which I, as a young man in the Bancroft Company in Wilmington, was enabled to become a stockholder in my company. If the company is prosperous it works very well.

On $15 shares we have been earning five or six dollars a share which meant that in three years the stock was the property of the employe. This year we have not done as well as this.

William, Hutchins and Norman Hapgood have actually gone ahead with the sale of the Columbia Conserve Company of Indianapolis, to their operatives by turning over the common stock to a group of trustees. Employes do not hold it individually but as a group and pay for it out of earnings. I visited this plant last summer and my visit happened to coincide with a weekly meeting at which additional stock, making a total of 51 per cent of all the common stock, was taken over by the employes. Mr. William Hapgood explained to the employes that now they could fire him immediately if they wished, but this is far from their desire. The test of this scheme will come when the Hapgood influence is removed and the management has to develop leadership. A committee of all the employes deals with all problems, including wages. These are determined on the basis of need rather than of efficiency. A married man gets double the amount received by a single man and the married man with children gets more than the married man without children. If the wife is a worker the married man gets only the wage of a single man.

There is another case in Birmingham, Alabama, of a company left to employes. In this case, however, I am told that the owner died without having completely realized his purpose. I understand that the company has fallen into the hands of a few who run it as ruthlessly as any individual might do.

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[12] Economist, Federal Council of the Churches of Christ in America, New York, N. Y.

[13] Editor, *Factory and Industrial Management*, McGraw-Hill Publishing Company, Inc., Chicago, Ill.

[14] President, Bates, Inc., Philadelphia, Pa.

I am constantly looking for some organized help to guide co-operative industrial enterprises after the owner with ideals and vision has passed away. I think there are hundreds of industrial owners who have this same feeling that they want to make things better for their employes without knowing how. I wish the Taylor Society might show us the way.

Morris L. Cooke, Chairman. I want to thank those who have taken part in this discussion, and the entire audience, for their helpfulness on this occasion and to urge that you all do your part in launching this code on ultra-conservative and radical alike. Its usefulness is going to depend on its measuring up to the requirements of contrary minds. The more expressions of opinion we can have from sane-minded people, whether on the right, on the left or in the middle, the better it will be. Our committee expects to be even more active in the future than in the past. We shall value your suggestions as to amendments.

Some Public Comment

Factory and Industrial Management[15]

January, 1931

THE industrial employment code, proposed by a committee headed by Morris L. Cooke, was regarded favorably by labor leaders, industrialists, educators and others . . . .

While the code is not in its final form, nor has it been adopted by the Society or the committee as a final document, it was offered for discussion and revision with that end in view. It defines and sets high standards for wages and earnings, hours of labor, security of employment, age policies, safety and health, and general personnel relationships.

. . . The report, when finally completed, promises to be a significant formulation of present-day standards of management.

Information Service[16]

December 27, 1930

At a meeting of the Taylor Society in New York on December 5, 1930, discussion centered on the most comprehensive industrial employment code which, as yet, has been advanced. The code has been formulated by a committee composed of employers, managers, engineers and economists.

. . . This is a notable pronouncement supporting the position held for years by the Federal Council of Churches and other religious bodies.

The document as a whole may well be regarded as a landmark in American industrial history.

The Journal of Electrical Workers and Operators[17]

January, 1931

Whether the Taylor Society ever formally accepts the report of its Industrial Code Committee, or not, whether it sharply revises the new code in its final draft, or not, a long step has been taken toward the clarification of issues in the field of industrial relations. . . . A committee of notables reported on a "tentative draft for discussion" of the Industrial Employment Code at the annual meeting of the Taylor Society held in New York City, December 5. Already that document has provoked nation-wide comment.

The new code is rich in the statement of important principles.

Detroit Times

December 9, 1930

A committee of experts, headed by Morris L. Cooke, consulting engineer in management, has drawn up a new magna charta for labor and management at the request of the Taylor Society, to which enlightened employers belong. This new code goes to the heart of the desires of the ordinary head of a family who wants assurance of security of tenure in his job. . . .

It is refreshing at this time to hear these high minded words from an employer's group, and it is to be hoped that the process of translating fine phrases into more humane policies will not be long delayed.

New York Woman's Wear Daily

December 8, 1930

The submission of a tentative industrial employment code was the highlight of Friday's session of the Taylor Society.

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[15] McGraw-Hill Publishing Company, Inc., Chicago, Ill.

[16] Department of Research and Education, Federal Council of the Churches of Christ in America, New York, N. Y.

[17] International Electrical Workers Union, Washington, D. C.

Some Experiences in Managing During the Past Decade[1]

From a Company Manufacturing Quality Products Which Require the Experience of Long-Term Employment

By CHARLES HENDERSON
President, S. S. White Dental Manufacturing Co., Philadelphia

WHEN I undertook to appear before you this evening it was not my intention to commit my thoughts to paper, but as I began to reminisce I felt that perhaps for your protection it would be safer if I did so. There is at least this to be said in favor of a written address: that it provides definite terminal facilities which are sometimes lacking in an extemporaneous effort.

Practically my entire business experience, dating from 1892, has been with the company whose history, policy and methods I shall touch upon this evening in the hope that some thoughts may be presented that will be of interest or service to you.

In 1844 Dr. Samuel Stockton White, a Philadelphia dentist, pre-eminent in his day, recognized the inadequacy of the equipment available to his profession and had the vision to see that a sound business might be built in providing everything required by the dentist to alleviate oral suffering or effectively to restore masticatory function. On the theory that the best that could be made was none too good, he undertook, through the medium of the company which bears his name, to put his conception into effect to manufacture quality merchandise. Persistently and continuously through the intervening years, up to the very present moment, his successors have striven to maintain the ideals which were born with the company and which are more truly a part of its life than are its physical assets. It is my purpose later on to speak fully on the subject of maintenance of quality in manufacturing, but I should like first to establish a correct understanding of the status of the S. S. White Dental Manufacturing Company in the field in which it operates and, at the same time, to present a picture of the magnitude, and, if it is permissible to use the word at the same time, the minitude of its business.

The headquarters of the company are in Philadelphia; it has three factories and eighteen retail selling branches, with subsidiary or affiliated companies in Canada, Great Britain, France, Brazil and Australia. It has sole agents or dealer connections throughout the world, with resident representatives in many countries, for the distribution of its products. It is safe to say that there is not a graduate dentist in the world who is not familiar with the name "S. S. White." The age of the company and its widely flung interests would justify the assumption that it is engaged in volume production, but the facts are that ounceage and not tonnage is the rule that predominates in the manufacture and sale of dental merchandise. The reason for this is quite obvious: all of the consumable merchandise for dentistry is finally disposed of by temporary or permanent insertion in the human mouth; in fact, the field may be narrowed still further since it is only the teeth within the mouth which provide our final field of operation.

The products required to accomplish relief or to provide restorations are most varied: they are platinum, gold and silver; copper, zinc and tin; these and many other metals are used in alloys and in amalgams, in plate, in wire, in solder and in other forms. Rubber in soft and in vulcanite condition; shellac preparations; varnishes, waxes in various forms; modeling and impression compounds; plastic materials and porcelain teeth in a multitude of sizes, shapes and shades—these are a few of the items with which we have to deal. It is of interest to note, in connection with artificial teeth alone, that there is a proper form and size available for all types of faces, whether they be square, tapering or ovoid, and that in color, shades range from those to match the whitest tooth produced by the most popular dentifrice to the most discolored brown tooth of the most inveterate devotee of Lady Nicotine.

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[1] Paper presented before a meeting of the Taylor Society, New York, December 3, 1930.

Burs, broaches, forceps, pliers, probes, scalers and elevators: these and many other items in a multiplicity of sizes and forms, together with appliances for regulating or straightening teeth, must all be made so they can either be used within the oral cavity or be left there permanently. Nor does the diversification stop here: the dentist calls into use anesthetics — nitrous oxid and oxygen, and combinations of oxygen and carbon dioxide. These gases require the use of inhalers and gas administration machines.

The hydraulic chair, with its many features of adjustable arms, headrest and footrest, is found in dental offices. There is also the dentist's stand with its electric mouth lamp, cautery, electrically heated spatulas, its hot air syringe, spray bottles, water and gas connections — everything immediately and conveniently at hand. Nor have we yet exhausted the list. There is the dental engine, the electric lathe, electric furnace, sterilizer, vulcanizer, and all the accessories accompanying such apparatus—verily a diversification that defies simplification.

I have purposely called your attention to these products of manufacture—and there are many more that I might list—to show that we have something of a task before us when we undertake quality production in all of them.

How can standards of quality be maintained in products so varied? Perhaps it is my function to attempt to answer rather than to ask this question. I shall try to do so, but I rely with more confidence upon those who will follow me to supplement this theme of quality production, in order that you may gather something valuable from this evening's session. Possibly you may find something of practical value in one or two typical instances of how we endeavor to maintain quality.

Obviously, it is necessary to treat each product as a separate problem, but underlying every case there are certain general principles which are common to all. These do not differ in our plant from those in any other manufacturing company striving to maintain a quality product.

First, the management must be absolutely convinced that quality is the prime consideration in the product to be produced. It is hardly necessary for me to define quality to this audience. You know that it does not consist of any veneer or finish; that it does not mean any color or necessarily any form, but I think we can agree that it does mean, first and always, complete adaptability to the purpose for which the product was designed. With this qualification fulfilled, there should, of course, be included all those features which afford complete satisfaction of every esthetic desire.

Next, it seems to me, in attaining and maintaining quality it is essential that all those engaged in the production of any article should be imbued with a pride of performance. They should have a personal responsibility for maintaining the prestige which their company enjoys. And every employe should realize that the work of an inspection department is an insurance which guarantees the continuance of his or her employment—not an institution devised to deprive workers, through rejections, of their just compensation for labor performed.

A fundamental inspection department principle upon which rests the final responsibility for the maintenance of quality in all products is that it must be free and independent of the production department and in no way responsible to it. Men and management must agree that quality merchandise is the only kind of merchandise they care to produce.

Two products widely divergent in physical properties and in their processes of manufacture may serve to illustrate our approach to the problem of maintaining quality. I will use dental rubber as an illustration covering that class of products where compounding or mixing of ingredients is a factor in production, and where texture and color must be maintained in the finished product.

The first consideration is the selection of raw materials and some means of testing them which will insure uniformity. Dental or vulcanite rubbers, that is, those rubbers which are used as base plates or foundations on which to carry artificial teeth, are quite complex in formula composition, but for the purpose of this discussion I will use a simplified formula consisting only of rubber, sulphur and vermilion. Let us suppose that at some time in our history we have been successful, after research and experimentation, in producing a first lot of one thousand pounds of a certain rubber, and that we are called upon to supply at intervals the same product. We may have exhausted one or all of the original raw materials. Let us assume that it is the vermilion only which has been exhausted. We find it necessary to purchase a new lot. Will it adequately serve our purpose? If we submit it to a chemical test the chemist's report may advise us that we have purchased mercury sulphide (HgS); that in it there is no free mercury, no free sulphur, no trace of anything deleterious, and only a minimum of moisture; apparently a satisfactory purchase from the chemical standpoint of composition. But this same report would have been rendered whether the sample tested had been black mercury sulphide or the more familiar orange or deep red vermilion, so that a chemical test in such a case is wholly inadequate to determine the usability of the new purchase. There is a test, however, to which the raw material may be subjected that will unfailingly determine whether it should be accepted or rejected, and that is the practical one of how the material actually behaves when incorporated in the product in which we intend to use it. To judge this satisfactorily we cannot, however, go on successively comparing the last lot received with the immediately previous purchase. On such a basis of comparison one might start with a brilliant orange and finally arrive at a deep red or black. If materials were selected on such a basis the only hope of detecting the error would lie in the customer, who might be in possession of an earlier specimen of the product in which a different lot of material had been used and therefore in a position to make direct comparison. Consequently we set aside from any originally accepted product, i.e., the first lot manufactured, a sufficient quantity of the product as a standard sample against which subsequent comparisons can be made. When the first manufactured lot of a compounded product is made, a sufficient quantity of each of the raw materials entering into the product is also retained as a standard of acceptable character. In the case of the vermilion cited, we would have set aside a quantity of this material from our first manufactured lot, so that for the fifth, sixth or any subsequent lot or batch of the product to be manufactured we could compare the raw material then available against the standard which we had selected. These samples of the finished product or of raw material so set aside we designate as "history samples." On any complaint or disagreement as to quality we can make a direct comparison of the history samples in our hands, which have been maintained under reasonable storage conditions, against any complaint sample submitted, with the full assurance that the aging factor, since it would be the same in both cases, can in no way influence our judgment in any comparison we might make. In order to know with which history to compare any product under investigation each and every unit package carries a lot number on the box in which it is packed. The manufacturing history card to which this lot number refers shows clearly the raw materials that were used, the formula composition, the processes of manufacture through which the product passed and the workmen who were engaged in producing it.

Each of our raw materials as it is received is given an identifying lot number. A separate stock sheet is made out which is debited with the material received, when this has passed the necessary tests and has been accepted for use. The stock sheet is credited with such raw materials as are withdrawn for manufacture and each credit entry shows the disposition of the stock. This system has the added advantage of acting as a perpetual inventory, subject to frequent physical check-up as the individual lots of raw materials are exhausted.

The time at my disposal prevents my going into details in regard to the method of testing raw materials, but as this in essence is practically identical with the plan employed in checking each manufactured lot produced, I will cover this phase of the subject only.

Let us assume that we are ready to manufacture, say, the twentieth lot of a certain red rubber. We assure ourselves from our stock records that we have on hand sufficient quantities of each of the necessary raw materials of tested lots to produce the desired quantity of the product required. The formula for an initial manufacturing batch is then entered on a production card and carefully checked. The lot numbers of the various raw materials used are indicated. The workman weighs the necessary ingredients and compounds them, or mixes them together. When this initial batch, which we will assume to be one hundred pounds, has been completed, a sample is selected from it and a sample from the history file of the previous lot manufactured is also taken, together with a sample from the standard or original lot manufactured. These three samples are put through the same process of vulcanization and finishing that will be followed by the customer in using the product. If this trial batch of the new lot of rubber to be manufactured compares, within established tolerance limits, with the previous lot manufactured and with the standard, the initial batch of the new lot to be manufactured is approved and the mixer can then proceed with confidence to use the raw materials at his disposal in accordance with the formula given. If any adjustment is necessary to maintain the new product within reasonable limits of the standard, it is made at this time. Manufacture does not proceed until such approval has been given. Subsequently, as each one-hundred-pound unit batch is finished, a sample is selected from it, and when all the units required are completed these samples are all vulcanized and completely finished at one time under identical conditions, which conditions are exactly those the customer should employ, in accordance with our directions, to obtain the most satisfactory results. A careful examination and test of these finished pieces determines beyond question whether the quality has been maintained or not, and no question is thereafter admissible on this point. The quality is there and we know it. It has been tested in a direct, practical way and we can confidently market the product knowing that it has fully met the specifications and that it will do what we claim for it.

In another type of manufacture, dealing with mechanical devices, tools or appliances, in which the factor of interchangeability plays a part, I will trace briefly the several steps we believe it necessary to observe in order to lay a proper foundation for maintaining quality production. First an idea is suggested, sometimes accompanied by a sketch, a sample or an inventor's model. This may originate within the company or be presented for consideration from some outside source. The first point to be determined is whether the idea is of such a nature that it will fit into our scheme of manufacture or merchandising. We must determine whether it has merit and whether we want it. To settle this question we have an authorization committee consisting of the president of the company, who views the matter from a general policy standpoint, the vice president in charge of sales and the vice president in charge of production; each considers the project from his respective angle. The treasurer of the company is also a member of this committee and our patent attorney is present at all meetings. A favorable decision by this committee authorizes the issuance of a development order which turns the project over to our engineering or research force.

In the next step, design is completed and a developmental model is made. During this stage the design is changed as often as necessary and the model is altered and refined until it fully meets all the requirements. When this has finally been accomplished it is approved. The authorization committee again reviews the matter and if satisfied authorizes production. This act makes the article from this point a regular product of manufacture and sale.

Production drawings are then made and finished parts, from which a shop model is constructed, are produced. Following actual production, certain refinements may appear desirable and workable tolerances be established. Finally, we arrive at standardized production drawings, supported by a complete, finished manufacturing model. This, then, is "the law and the prophets." No changes in standardized production limits are permitted except upon the approval of the dimension and inspection divisions. No changes in material, design, construction or finish are permitted without the approval of the research and development divisions.

These are the principles involved in quality maintenance, and growing out of them we have our model room, our photographic department for visually recording all standards and all changes, and our blue print system, which is a very important link in the chain of quality production.

All blue prints are from tracings of the standardized production drawings, and are made in sufficient quantities to be distributed to each department involved in the manufacture of any particular product. They are of a standard size, uniformly bound, and a record is kept of every outstanding print. Before any new lot of manufacture is started all prints pertaining to it are recalled and are stamped with the date subsequent to that on the order authorizing manufacture. This insures the incorporation of any authorized changes, in limits or design, which may have been made since the previous lot was manufactured. Such changes appear under the date upon which they were adopted upon the master or standard sheets. Every drawing, and consequently every blue print, bears the officially accepted title of the product to which it refers. Every individual part shown on a blue print bears an identifying number. Any combination of parts entering into a final assembly, where such parts are permanently attached as by soldering, riveting, etc., and are not to be separated or detached from each other, are designated as X combinations, while such assemblies as may be separated without injury to the parts, or are designed to be sold at times separately, are designated as Y assemblies. In the first category might occur, for instance, such an item as a spatula, with a steel blade and a riveted handle. It is not contemplated that the blade, the handle or the rivets will ever be sold as separate units; this would be an X combination, while perhaps the most simple example of a Y combination would be that of a bolt and a nut. These could be readily separated without injury to either part, and this would be done if there were a demand for the separate parts. In any changes in design not affecting the use or interchangeability of a part or not of sufficient importance to be noted as a change by a customer, the same blue-print number is maintained with a letter prefix added to the number, A for the first change, B for the second, and so on. If any change of greater magnitude is introduced an entirely new number is assigned to the part affected. The number previously applying is removed from the blue-print list and is thereafter only to be found in the history file of the product.

Another important and interesting step in maintaining quality has been the development of our tool-board system whereby, for each operation on each part of a product, the necessary tools, go and not-go gauges and a model piece are delivered to the foreman with his instructions on the particular job in hand.

There may be other ways of attaining the same result as that for which we strive—quality production—and I hope to learn of them from those who are to follow me this evening. The particular brief I hold for the plan to which you have so patiently listened is that, in our experience, it works.

Perhaps it would be well if I terminated my remarks at this point. Your program committee, however, suggested that I comment on what it deems a matter of considerable interest, namely, the effective use of those who have passed the prime of what is supposed to be efficient productivity. Since forty-five years of age has sometimes been indicated as this point, I approach this subject with some degree of diffidence. The exigencies of the present moment are perhaps a sufficient excuse for giving this topic serious consideration.

The daily press, economic publications, business reviews and official bulletins all appraise the situation of unemployment as most seriously affecting the workers over forty or forty-five years of age, and this, they tell us, is because industry has decided that these men cannot produce at the requisite speed. Such a generalization is not, I believe, a sound basis for procedure. It cannot be said truthfully that all men of forty-five are less efficient than men of twenty; for some things they may be, and probably are, but what are those things? Many foolish decisions are arrived at by considering one side of the question only. Let us grant that in some cases, and there may be many, the alertness and speed of youth are most desirable factors, indeed, almost prerequisites, but do these qualities sum up the whole range of desirable attributes in an employe? What about experience, judgment, loyalty, conscientious application? Have these no value? Are these the outstanding qualities of youth or do we find them best exemplified where seasoned maturity and a realization of the eternal fitness of things in life have made an impression on consciousness? Generalizations are all very well but somehow or other they do not get us very far. Often too many exceptions have to be introduced even to suggest that a rule exists.

One of the problems of industry today is how to utilize the older worker. Our state of society does not contemplate that they can be permanently disposed of by wholesale execution; they must be provided with food and shelter and clothes, and in such manner and quantity as not to create within the state a menace to its own existence. Industry cannot thrive on revolution. The trouble in large measure with the problem, it seems to me, is not only the error of generalization but the blind acceptance of that generalization by many who have assumed that what has been found worthy of acceptance in their business by its proponents must without question be good for all. My plea is for an analysis of each business by the executives in charge on this most vital question. Speed may be exacting too high a premium. The temporary advantage secured may be offset by taxes to support old-age pensions and other alternatives which may be equally undesirable. Men must live. A recent bold-type headline in a prominent Sunday paper in a large eastern city asks the question, "After forty, what?" And Edward C. Rybicki is quoted in this connection as follows:

"It has always been a mystery to me why the average employer considers a man of forty or over a liability. In my opinion he is an asset, with his years of practical experience, his wisdom and his stability. He is usually loyal, serious and interested in his work. The young man or woman may have a bit more pep—that is quite true; but they sometimes scatter their forces. Many of them have not yet learned how to co-ordinate, how to concentrate, how to apply themselves to their tasks in the most efficient way. They are often flighty, with their minds on things apart from their work—play, love affairs, their outside social and recreational activities." And in the *United Business Service* for November 1 there is an article on the subject "How shall we provide for the unemployed?" This statement in particular I call to your attention:

"Any social economic system that is to survive must find a way of providing a means of living for the great mass of the people under any and all circumstances."

The American Academy of Political and Social Science, meeting in Philadelphia on next Friday and Saturday, December 5 and 6, has as its topic for this two-day conference, "Security in Industry." The heads under which this subject will be considered are interesting. They are: (1) the problem of security in industry; (2) irregularity of employment; (3) the possibility of stability of employment; (4) methods of stabilizing employment; (5) the problem of the older worker and old age; (6) facing and solving the problem of security.

This security so much emphasized is security not for the worker only, whatever his age, but security for industry itself, which is indissolubly bound up with and is in the same boat with all its workers.

Without any thought that we have completely solved the problem of the older employe, for I know that we have not, I wish to place before you some experiences which may be suggestive. Whether our list of employes is average in age or top-heavy with old timers as compared with other industries I have not had the time to investigate, but the following table of percentages may have some significance in the study of the question:

AGE GROUP	PERCENTAGE OF EMPLOYES
Under 20 years	12.7
20 to 25 years	18.0
25 to 30 years	12.1
30 to 35 years	10.2
35 to 40 years	8.5
40 to 45 years	9.0
45 to 50 years	7.6
50 to 55 years	7.5
55 to 60 years	5.6
Over 60 years	8.8

The total of those up to and including forty-five years of age is 70.5 per cent. The total of those over forty-five years of age is 29.5 per cent. Segregating our factories into a group by themselves, I find the relationship to be 64 per cent under and 36 per cent over forty-five years of age.

In a survey of the effectiveness of workers over forty-five compared with those under this age, we have taken a six-weeks' period of production in several departments and found that 70 per cent of those over forty-five are regularly making their quota or better and earning a bonus, while in the group under forty-five, 87 per cent are making the quota or earning a weekly bonus. If we exclude from our calculations those in the older group who are over sixty-five, where age is unquestionably a factor, we find that 85 per cent of the employes are able to make or exceed their quota—not a bad showing for the "old guard." This is only 2 per cent below the record by the youngsters, so that our contention that in some instances at least the experience of age may prove an acceptable substitute for the speed of youth seems to have some foundation in fact. The hare and the tortoise are still contestants, and the race is not always to the swift.

The basis for our judgment of efficiency is a plan which contemplates that an operator deliver 6
to his employer sixty units of work per hour for an hour's pay, and that the operator be paid at his regular rate for work done in excess of the sixty units per hour. The determination of what is a normal hour's work is difficult. The answer can never be exact, but the plan under which we are

working is that a good operator, by application and sincere effort, should do one-third more than a normal day's work, or produce at the rate of an eighty-unit hour. Continual observation and a careful breaking down of operations have allowed us to set what we believe to be fair units of expected performance. A careful analysis of the figures on the effectiveness of operators seems to indicate clearly that there are few who have failed by reason of age alone to make the standard. There are, of course, many who have not reached the eighty-unit mark, but on the other hand, there are many who repeatedly make sixty units an hour or over.

In setting standards, operators are rated on the speed with which they work during the time in which they are studied. This brings about a leveling out between the slow and the fast operator. An easy standard is not, therefore, obtained from a study on a slow operator, nor is a hard standard set up from the study of a fast one. The ability to judge speed and properly to rate it is, of course, the most difficult thing in time study. We make no claim that we have reached perfection in this regard but we do claim that we have had some experience. Our time studies are the result of the observations made by different time-study men on different operators doing the same job. What we have striven for is fairness, and this we believe we have attained.

Perhaps the fact that experience brings in its wake patience and skill and the knowledge that things done right need not be done over are all factors in favor of the older employe. Sometimes also the knowledge that there is no good substitute for work prevents the older worker from straying into those primrose paths of dalliance that youth is more prone to tread.

"Trustworthy" is a title that is won through years of demonstrated accomplishment; youth cannot claim that which it has not proved. Older employes have retained their positions and remained to be classified as such because they have produced; they have proven their efficiency. If this were not so they would have been included by the statistician in the dividend used to arrive at the quotient "labor turnover." This quotient industry constantly strives to reduce by introducing satisfactory working conditions, by welfare methods, by insurance plans and stock participation, and in other devious ways. For what purpose and why? The final answer is always: to reduce the expense and wastage involved in a high labor turnover, necessitating the constant training of new and inexperienced help. How can this reduction in turnover be better accomplished than by an analysis of the work to be done and by an allocation that requires experience of those who have it; speed, of those from whom the vim and vigor of youth has not departed? Fortunately for our company the diversity of our production makes this feasible. The infrequency of certain operations might prove a handicap if they were entrusted each time to a new crew or inexperienced help. With a fair sprinkling of those who have seen twenty-five years or more of service some things lose the sense of novelty, even if they occur but three or four times a year. A workman who has served the company for twenty-five years may have seen certain work performed one hundred times, even although it occurs at quarterly intervals only.

We recognize the value of these old-time employes, and we have an honor roll on which their names are inscribed. This starts when an employe has been with the company uninterruptedly for twenty-five years. Although he may be on an hourly basis of compensation he is then given the privilege of two weeks' vacation with full pay. Any time off for sickness or from any other cause may be applied against this vacation grant at the employe's request. As an entrant on the honor roll passes from the twenty-five to the thirty-year class and so on by five-year increments his name is advanced on the honor roll.

There are employes who have been with the company for twenty-five years or more but whose service has been an interrupted one. We have for these employes a quarter-century roll, and those entitled to recognition under this heading are granted a day's leave with pay annually for each five years of service. It is interesting to note in this connection that of 77 employes entitled to leaves of absence under these plans forty-eight took their complete leaves while twenty-nine have taken only a portion of the time to which they are entitled.

We have no pension plan which automatically retires employes at a given age, but each individual case is considered on its merits. Those who by length of service and faithful performance of duty are by age or sickness incapacitated are retired and carried on a pension roll. The details of a pension plan are not so important, but the fact that the company has made some provision for its faithful servants is unquestionably a factor in relieving worry and in creating a frame of mind more capable of considering quality of production and more determined to see that performance squares with promise in producing the best goods we know how to make.

Another matter of importance that has a bearing in developing that intangible something which we call the "spirit of the organization" is the fact that more than 50 per cent of our employes are stockholders in the company; it is therefore their company's product, whose quality they are working to maintain.

We believe our employes have confidence in their fellow employes and the management and that they know the management's desire so far as quality is concerned. I know the management has full confidence in the integrity, good-will and determination of our employes to maintain the standards of the company's products, and in a large measure this confidence is grounded upon the proven character of the older employes, from whom the younger men may learn that perseverance and a determination to shirk nothing that makes for quality are factors quite as important as speed and pep in assuring stability and continuity in business. Give the old boys a chance!

News of the Sections

Eastern Massachusetts

The Boston Chapters of the Taylor Society, the Society of Industrial Engineers and the Associated Industries of Massachusetts met together on January 14 at the Boston University Club to hear Mr. Alvan T. Simonds, President of the Simonds Saw and Steel Company of Fitchburg, Mass., on the subject "Looking Ahead." Mr. Simonds believes that business can forestall depressions and pointed out some of the signs that it must watch for if it would do this. He himself believes so strongly in the approach of better times that he has recently completed a new four and one-half acre factory. The model features of its construction, as well as the fact that it has been built at this time, are attracting wide attention.

Central New York

Mr. J. C. Howell, of the Associated Consulting Economists of New York, addressed the Central New York group for the ninth time in Syracuse on January 27. His subject on this occasion was "The Economic Outlook for 1931." These annual visits of Mr. Howell are considered of such importance that several other interested groups are regularly invited to share them. This year the Manufacturers Association, the Syracuse Association of Credit Men and Cost Accountants and the Purchasing Agents joined with the local branch of the Taylor Society.

New York Metropolitan

The 150 people who came together at the Fraternity Clubs on January 29 to hear a discussion of one aspect of Russia's five-year plan gave ample evidence of the widespread interest in what is going on in that country. Mr. H. J. Freyn, President of the Freyn Engineering Company of Chicago, spoke on "The Management Side of the Russian Five-Year Program." As technical advisor to the Soviet Government in its development of the iron ond steel industry he has spent a large part of his time in Russia during recent years, and was well equipped to give a masterly presentation of the "management side" of the Russian industrial venture. Miss Mary van Kleeck, Director of the Department of Industrial Studies of the Russell Sage Foundation, ably conducted the meeting. Mr. Lewis Lorwin, of the Robert Brookings Graduate School of Economics and Government, who has for a number of years been a student of the Russian system, both here and in Russia, and Mr. L. Rutenborg, himself a Russian and one of the vice-presidents of the Amtorg Trading Corporation, were the formal discussors of the paper. Following the formal addresses a very general participation in the meeting took the form of a variety of questions put to the three speakers.

Washington, D. C.

Washington members of the Taylor Society met for the first time this year at luncheon on January 28. Here also Russia was the subject of discussion. Professor John H. Gray, of the American University, who spent last summer with a group of economists in Russia, talked on what there is of practical value in the Soviet economic system which can teach the capitalistic world to avoid such cataclysms as are affecting us at the present time.

Reviews

Harvard Business Reports. Compiled by and published for the Graduate School of Business Administration, Harvard University, McGraw-Hill Book Company, Inc., New York and London, Vol. 7, 1930, pages xii, 590; Vol. 8, 1930, pages xiv, 687; Vol. 9, 1930, pages xi, 363.

These three last volumes in Harvard's notable contributions of case material to business give evidence of steady progression in content and form as the result of increasing experience.

Volume 7 still largely harkens to the past in the fact that it is a miscellaneous group of cases, all of which come under the designation of business but do not deal specifically with a particular function of industry or with a particular industry. Hence the usefulness of the volume tends to be restricted chiefly to Harvard students who have occasion to refer to this volume in connection with assignments. Volume 8, however, takes a decided step forward. Although it does not limit itself to a specific function of business, its 687 pages all deal with business aspects of a single industry, that connected with motion pictures. It thus represents a comprehensive survey of the leading problems which that industry has had to meet. This grouping does not detract from the usefulness of the volume to students of business in general, but serves to give the material a more permanent place in the field, both among those who are in the film industry and those who have reason to study it.

Volume 9 is a still further development which will be welcome to those who have felt that earlier Reports give the appearance of heavy tomes that make the contents seem unnecessarily forbidding. The cases in this volume deal entirely with the marketing of industrial goods, giving a definiteness to the grouping which is helpful to the casual purchasers of books as well as to those with specialized interests. At the same time the book itself has been substantially reduced in size. It contains only 363 pages. It is understood that future numbers in the series will be kept somewhere around this size—a welcome change.

In these volumes one sees more frequent reference citations to previous cases in the Harvard Business Reports in which one aspect or another of a current problem has been discussed. Occasionally material not in case form is cited, but a general treatise on the subject is almost never mentioned. Possibly the reason for this exclusive focus on case material is due to the desire of the Harvard staff to be free to suggest to their students the most recent material at the time the assignment is given. It is also true that the school aims to promote inductive reasoning from reported factual situations. But such reasoning can in many cases be aided through a timely suggestion of an article, or book, or pages in a book, dealing with some aspect of the situation under discussion. A student having the facilities of the Harvard business library and staff may find no difficulty in looking up material in connection with the case, but for the great mass of outsiders, for whom these volumes are likewise intended, there is a distinct drawback in this lack of references. It is hoped, therefore, that in the future there will be more of a sprinkling of well-selected references to authorities who have contributed notably to the discussion of points arising in a problem. In this way the Harvard case books will be the better integrated with the knowledge of today.

HERMAN FELDMAN[1]

Manual on Research and Reports. Issued by the Committee on Research of The Amos Tuck School of Administration and Finance, Dartmouth College, The Williams & Wilkins Company, Baltimore, 1931, pages, 108.

All those individuals or groups, in whatever line of activity, who have to do with the making of reports should own this little book whose hundred pages are packed with the complete story of how to gather and present the material of investigations. The following chapter heads show that every phase of the subject, from analysis of the problem to proof reading, has been dealt with concisely and in a practical manner: Laying the Groundwork, Gathering Information, Recording and Organizing Information, Analyzing and Interpreting the Data, Preparing the Manuscript, Anatomy of a Report, Guarding Against Error.

While the book has been issued under the auspices of the Committee on Research of The Amos Tuck School of Administration and Finance, Dartmouth College, we understand that two of our members, Professors Burleigh and Feldman, played an important part in its preparation.

HELEN A. CARNES[2]

Material Control and Storeskeeping in Machine Shops and Foundries. By Willis Wissler, The Ohio State University Press, Columbus, Ohio, 1929, pages xii, 284.

This book gives the results of a number of case studies conducted under the auspices of the Bureau of Business Research of the Ohio State University, College of Commerce and Administration.

The purpose of the study, as stated by the author, is "to present a factual record of actual practice" without attempting to evaluate such practice.

The practices of nine companies are set forth in an orderly and workmanlike manner, the text being accompanied by numerous forms and flow charts.

Perhaps the most striking thing brought out by these studies is the fact that while the terminology of scientific management has come to be widely used, the mechanism and technique, except in certain details in two of the nine concerns, fall far short of that of scientific management. The same may be said with respect to the type of organization described. It is interesting to note, however, that while none of these concerns appears to have progressed to the scientific management stage, none of them would be classed as unsystematized. All of them fall within the limits of systematized management. If this may be taken as a typical cross sectional picture of a large part of American industry, as the reviewer believes to be the case, much benefit may still accrue to producer and consumer from a better understanding of the principles of scientific management and particularly of the mechanisms and technique through which they have been successfully applied.

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[1] Professor of Industrial Relations, The Amos Tuck School of Administration and Finance, Dartmouth College, Hanover, N. H.

[2] Taylor Society, New York, N. Y.

Industrial history shows that management will take the trouble to improve itself only as economic pressure forces it to do so. While this is to be regretted, it is encouraging to know that the greater effectiveness of scientific management will still be available to our industries when halfway measures cease to show profits.

King Hathaway[3]

Practical Office Supervision. By Glenn L. Gardiner, McGraw-Hill Book Co., New York, 1929, pages 295.

Mr. Gardiner has a happy faculty of giving concreteness and vividness to his discussions of management problems. And in this study of office management it has stood him in good stead and resulted in a book of unique distinction in the field of office management. The emphasis is not merely on the human aspects of management but upon actual situations which are analyzed and prescribed for. The psychological approach is uppermost and the author's psychology is up to date and thoroughly illuminating both in dissection and in prescription of better methods. The range of topics covered is complete and the attitude progressive. Altogether this is head and shoulders above any other book dealing with people rather than paper work in offices, which has yet appeared. A splendid gift book and conference discussion text for all who direct office workers!

Ordway Tead[4]

Organized Training in Business. By James H. Greene, Harper & Brothers, New York, 1928, pp. xiv, 335.

In a field in which there are none too many thorough and comprehensive texts, *Organized Training in Business* should serve as a valuable manual of procedure. It not only argues the advantages of training but tells how it is to be done.

Starting with "types of training," Mr. Greene discusses the planning of a program, the building of a teaching organization, the selection of those to be trained and laying out and administering a course for them, measuring the results and selling the program. Suggestive examples of instructions and procedures enhance the practical usefulness of the text.

The point of view is sound. Training is not telling. Skill must be acquired by doing, accompanied by the criticism which enables the learner to discover and remedy his faults. Teaching others, the foremen and coaches and other members of the line organization, how to train their men is no small part of the work of the department.

The emphasis is consistently on procedure and practice rather than on theory. The book is written from the point of view of the department head who must sell his program to management and make the best of available resources, rather than that of the general executive free to plan comprehensively without such restrictions. But that is just the condition which confronts many of those responsible for training programs. Both industrial and mercantile training problems are discussed.

The book is the best practical guide to industrial training procedure which has come to my attention, and contains a great deal for those indirectly interested in the subject, as executives, educators, students of personnel problems, as well as for the training department heads for whom it is specifically written.

H. P. Dutton[5]

Industrial Structure of New England. Part I of the Commercial Survey of New England. By Charles E. Artman, Bureau of Foreign and Domestic Commerce, U. S. Department of Commerce, Washington, D. C., 1930, pages xii, 591.

Commercial Structure of New England. Part II of the Commercial Survey of New England. By Edward F. Gerish, Bureau of Foreign and Domestic Commerce, U. S. Department of Commerce, Washington, D. C., 1929, pages x, 323.

In these two volumes the Department of Commerce has presented a vast amount of material which should prove of considerable value to organizations doing business in New England. These surveys will enable research and statistical departments to secure data which formerly involved the expenditure of large sums of money. But perhaps the greatest value should be derived by the small business which has heretofore been unable to use such data because of the prohibitive cost of gathering it.

P. E. Henderson[6]

A Theory of the Labor Movement. By Selig Perlman, The Macmillan Company, New York, 1928, pages xii, 321.

The Labor Problem. By J. A. Estey, McGraw-Hill Book Company, New York, 1928, pages x, 378.

Theories of the how, what and why of the labor movement offer a fruitful source of speculation and Professor Perlman here offers his interpretation. Theories are necessarily abstract

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[3] Manning, Maxwell & Moore, Inc., New York.

[4] Editor of economic and business books, Harper & Brothers, and lecturer on personnel subjects, Columbia University.

[5] Professor of Factory Management, Northwestern University, Evanston, Ill.

[6] Taylor Society, New York, N. Y.